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CLARA BARTON,

THE AMERICAN APOSTLE OF THE RED CROSS.

THERE are elements of strength in this portrait which are evident enough to the observer. The profiles of the top-head, of the mouth and chin and cheek, indicate them. Strength of character has several phases; in some persons it has the character of the fierce, resistless cyclone, in others it is like the steady, groundswell of the ocean; in others it resembles the sturdy oak standing alone in the broad meadow; in others it is like the dashing, foaming current of

a rapid river; in others still, it operates like a shifting gusty wind; in still others it reminds one of the flow-tide, the waves of which, seemingly, retreat after an influx, but only to return with increased power and further advancement. By organization, Miss Barton appears to possess, in a good degree, the type of strength illustrated by the ocean movement; by temperament there is something of the tidal in her nature, an emotive influence which adds an elastic, sensitive, correlative energy to what would otherwise be positive and inflexible in its manifestation of power. By organization she is distinguished for remarkable firmness and decision, a tone of character due partly to the influence of her intellect, which is so marked by perceptive ability as to render her much more than usually appreciative of the practical in life. She looks at the real situation of affairs, marks its bearing on the future of an undertaking, weighs the effect of direct or indirect effort, and "counts the cost" before entering fully upon any work. But when a result is reached—and she is much more deliberate than nine out of ten women in coming to conclusions—it is converted by her Firmness into a conviction which becomes a motive, an energizing factor which she must obey. She is not slow to form impressions, but to act upon them, unless they are confirmed by her practical sense of their correctness, and her moral nature is convinced of the expediency of their application.

Her temperament is active, and its influence on an organization containing many attributes of practical energy is stimulating and inspiring. She is ambitious to win success, and will work steadily and patiently toward her object, believing that she will reach it. She has large Caution, but it has Combativeness behind it, so that she is prudent and calculating without being fearful or irresolute in her work. Her Firmness is backed up too by Conscientiousness, the chief source of her moral strength:

> "To labor in the path of duty—
> Springs up like a thing of beauty"

to her, and the sense of obligation furnishes her with spirit and enthusiasm, in which there are no adulterations of selfishness. She is not inclined to imitate others, merely, because it is correct "form" to do so; she will not follow in old paths when she can reach her object by more direct and better channels; but her conduct is governed in the main by her intellectual sense of fitness and by convictions of duty. She is not wanting in respect for others, yet her demeanor is more characterized by honesty and kindness and a sensitive reserve than by formal courtesies. The head is long in the anterior lobe, and comparatively short in the lower occipital. This indicates a mind in which the intellectual faculties are more influential than the social sentiments, or rather a mind in which the operation of the social feelings is controlled by the judgment and divested of merely passional phases. With so much intellect and so much positiveness and decision, such a mind demands an object, and is strenuous in effort for its accomplishment; the sentiments of duty and aspiration are gratified only by success, and that in large measure.

The following sketch of this lady's career—a life entirely without precedent, so far as its more conspicuous features are concerned—is derived mainly from the second volume of the "History of Woman Suffrage."

Clara Barton was the youngest child of Capt. Stephen Barton, of Oxford, Mass., a non-commissioned officer under "Mad Anthony Wayne." Captain Barton, who was a prosperous farmer and leader in public affairs, gave his children the best opportunities he could secure for their improvement. Clara's early education was received principally at home under the direction of brothers and sisters. At sixteen, she commenced teaching, and followed the occupation for several years, during which time she assisted her oldest brother, Capt. Stephen Barton, Jr., a man of fine scholarship and business capacity, in equitably arranging and increasing the salaries of the large village schools of her native place, at the same time having clerical oversight of her brother's counting-house. Subsequently, she finished her school education by a very thorough course of study at Clinton, N. Y. Miss Barton's remarkable executive ability was manifested in the fact that she helped to popularize the Public School system in New Jersey, by opening the first free school in Bordentown, commencing with six pupils, in an old tumble-down building, and at the close of the year, leaving six hundred in the fine edifice at present occupied.

At the close of her work in Bordentown, she went to Washington, D. C., to recuperate and indulge herself in congenial literary pursuits. There she was, without solicitation, appointed by Hon. Charles Mason, Commissioner of Patents, to the first independent clerkship held by a woman under our government. Her thoroughness and faithfulness fitted her eminently for this position of trust, which she retained until after the election of President Buchanan, when, being suspected of Republican sentiments, and Judge Mason having resigned, she was deposed, and a large part of her salary withheld. She returned to Massachusetts and spent three years in the study of art, belles-lettres and languages. Shortly after the election of Abraham Lincoln she was recalled to the Patent Office by the same administration which had removed her. She returned, as she had left, without question, and taking up her line of duty, awaited developments.

When the civil war commenced, she refused to draw her salary from a treasury already overtaxed, resigned her clerkship, and devoted herself to the assistance of suffering soldiers. Her work commencing before the organization of the commissions, was continued outside and altogether independent of them, but always with a cordial sympathy. Miss Barton never engaged in hospital service. Her chosen labors were on the battle-field from the beginning, until the wounded and dead were attended to. Her supplies were her own, and were carried by government transportation. For nearly four years she endured the exposures and rigors of soldier life, in action, always side by side with the field surgeons, and this on the hardest-fought fields; such as Cedar Mountain, second Bull Run, Chantilly, Antietam, Falmouth and old Fredericksburg; at the siege of Charleston, on Morris Island, at Wagner, Wilderness and Spottsylvania, the Mine, Deep Bottom; through sieges of Petersburg and Richmond with Butler and Grant; through summer without shade, and winter without shelter, often weak, but never so far disabled as to retire from the field; always under fire in severe battles; her clothing pierced with bullets and torn by shot, exposed at all times, but never wounded.

Firm in her integrity to the Union, never swerving from her belief in the justice of the cause for which the North was fighting, yet on the battle-field she knew no North, no South. She made her work one of humanity alone, bestowing her charities and her care indiscriminately on the blue and the gray, with an impartiality and Spartan firmness that astonished the foe and perplexed the friend. On this account she often fell under the suspicion or censure of Union officers unacquainted with her motives and character. Their reproaches or taunts were met with the same calm courage as were the bullets of the enemy,

and many a Confederate soldier lives to bless her for care and life, while no Union man will ever again doubt her loyalty. All unconsciously to herself she was carrying out to the letter in practice the grand and beautiful principles of the Red Cross of Geneva (of which she had then never heard), for the entire neutrality of war relief among the nations of the earth, a great international step toward a world-wide recognized humanity, of which she has since become the national advocate and leader in this country.

At the close of the war she met exchanged prisoners at Annapolis. Accompanied by Dorrence Atwater, she conducted the expedition, sent at her request by the United States government, to identify and mark the graves of the 13,000 soldiers who perished at Andersonville. From Savannah to that point, as theirs were the first trains that had passed since the destruction of the rail-roads by Sherman, they were obliged to repair the bridges and the embankments, straight en bent rails, and in some places make new roads. The work was completed in August, 1865, and her report of the expedition was issued in the winter of 1866.

The anxiety felt by the whole country for the fate of those whom the exchange of prisoners and the disbanding of troops failed to reveal, stimulated her to devise the plan of relief, which, sanctioned by President Lincoln, resulted in the "search for missing men," which (except the printing) was carried on entirely at her own expense, to the extent of several thousand dollars, employing from ten to fifteen clerks. In the winter of 1866, when she was on the point, for want of further means to carry out her plans, of turning the search over to the government, Congress voted $15,000 for reimbursing moneys expended and carrying on the work. The search was continued until 1869, and then a full report made and accepted by Congress. During the winter of 1867–8 Miss Barton was called on to lecture before many lyceums regarding the incidents of the war.

In 1869, her health failing, she went to Switzerland to rest and recover, where she was at the breaking out of the Franco-Prussian war, and immediately tendered her services on the battle-field, under the auspices of the Red Cross of Geneva. The Grand Duchess of Baden, daughter of the Emperor of Germany, invited Miss Barton to aid her in the establishment of her noble Badise hospitals, a work which occupied several months. On the fall of Strasburg Miss Barton entered the city with the German army, organized a labor system for poor women, conducting the enterprise herself, employing remuneratively a great number, and clothing over thirty thousand. She entered Metz with hospital supplies the day of its fall, and Paris the day after the fall of the Commune. Here she remained two months, distributing money and clothing which she carried, and afterward in every besieged city in France she extended succor to the poor and suffering.

She is a representative of the "International Red Cross of Geneva," and President of the American National Association of the Red Cross, honorary and only woman member of the Comité de Strasbourgeries; was decorated with the "Gold Cross of Remembrance" by the Grand Duke and Duchess of Baden, and with the "Iron Cross of Merit" by the Emperor and Empress of Germany.

Miss Barton may be said to have given her whole life to humanitarian affairs, especially those having a largely national character. The positions she has occupied, whether remunerative or not—and she has filled but few paid positions—have been pioneer ones, in which her efforts and success have been to raise the standard of woman's work and its recognition and remuneration. Her time, her property and her influence have been held sacred to benevolence of that character that will assist in true progress. Nevertheless, she is one of the most retiring of women, never voluntarily coming before the world except at the call of manifest duty, and shrinking with peculiar sensitiveness from anything verging on notoriety.

Her summers are usually passed at her pleasant country residence at Dansville, New York, and her winters in Washington in the interests and charge of the great International movement which she represents in America.

In a recently prepared pamphlet Miss Barton explains at length the motive of the Red Cross, with many interesting facts gleaned from the history of the undertaking, which not only is one of the noblest expressions of humanitarian zeal known in our civilization, but also a powerful motive toward the establishment of peace, sympathy and co-operation among nations. In behalf of this grand movement Miss Barton addresses the government and people of the United States in eloquent terms, and we close this sketch with a few paragraphs from the address:

"In attempting to present to the people of this country the plan of the Red Cross societies, it is proper to explain that originally and as operating in other countries they recognize only the miseries arising from war. Their humanities, although immense, are confined to this war center. The Treaty does not cover more than this, but the resolutions for the establishment of societies under the Treaty, permit them to organize in accordance with the spirit and needs of their nationalities. By our geographical position and isolation we are far less liable to the disturbances of the war than the nations of Europe, which are so frequently called upon that they do well to keep in readiness for the exigencies of war alone. But no country is more liable than our own to great overmastering calamities, various, wide-spread and terrible. Seldom a year passes that the nation from sea to sea is not by the shock of some sudden, unforeseen disaster brought to utter consternation, and stands shivering like a ship in a gale, powerless, horrified and despairing. Plagues, cholera, fires, flood, famine all bear upon us with terrible force. Like war these events are entirely out of the common course of woes and necessities. Like death they are sure to come in some form and at some time, and like it no mortal knows where, how, or when. What have we in readiness to meet these emergencies save the good heart of our people and their impulsive, generous gifts? Certainly no organized system for collection, reception nor distribution; no agents, nurses nor material, and worst of all, no funds; nowhere any resources in reserve for use in such an hour of peril and national woe; every movement crude, confused and unsystematized, everything as unprepared as if we had never known a calamity before, and had no reason to expect one again. Meanwhile the suffering victims wait! True, in the shock we bestow most generously, lavishly even. Men 'on 'Change' plunge their hands into their pockets and throw their gold to strangers, who may have neither preparation nor fitness for the work they undertake, and often no guaranty for honesty. Women, in the terror and excitement of the moment and in their eagerness to aid, beg in the streets and rush into fairs, working day and night, to the neglect of other duties in the present, and at the peril of all health in the future—often an enormous outlay for very meager returns. Thus our gifts fall far short of their best, being hastily bestowed, irresponsibly received and wastefully applied. We should not, even if to some degree we might, depend upon our ordinary charitable and church societies to meet these great catastrophies; they are always overtaxed. Our communities abound in charitable societies, but each has its specific object to which its resources are and must be applied; consequently they can not be relied upon for prompt and abundant aid in a great and sudden emergency. This must necessarily be the case with all societies which organize to work for a specific charity; and this is as it should be; it is enough that they do constantly bestow. Charity bears an open palm—to give is her mission. But I have never classed these Red Cross societies with charities, I have rather considered them as a wise national provision which seeks

to garner and store up something against an hour of sudden need. In all our land we have not one organization of this nature and which acts upon the system of conserved resources. Our people have been more wise and thoughtful in the establishment of means for preventing and arresting the destruction of property than the destruction of human life and the lessening of consequent suffering. They have provided and maintain at an immense cost, in the aggregate, a system of fire departments with their expensive buildings and apparatus, with their fine horses and strong men kept constantly in readiness to dash to the rescue at the first dread clang of the fire bell. Still, while the electric current may flash upon us at any moment its ill tidings of some great human distress, we have no means of relief in readiness such as these Red Cross societies would furnish. . . . .

"The sooner the world learns that the halo of glory which surrounds a field of battle and its tortured thirsting, starving, pain-racked, dying victims exists only in imagination; that it is all sentiment, delusion, falsehood, given for effect; that soldiers do not die painless deaths, that the sum of all human agony finds its equivalent on the battle-field, in the hospital, by the weary wayside and in the prison; that deck it as you will it is agony; the sooner and more thoroughly the people of the earth are brought to realize and appreciate these facts, the more slow and considerate they will be about rushing into hasty and needless wars, and the less popular wars will become. Death by the bullet painless! What did this nation do during eighty agonizing and memorable days but to watch the effects of one bullet wound? Was it painless? Painless either to the victim or the nation? Though canopied by a fortitude, patience, faith and courage scarce exceeded in the annals of history, still was it agony. And when in his delirious dreams the dying President murmured, 'The great heart of the nation will not let the soldiers die,' I prayed God to hasten the time when every wounded soldier would be sustained by this sweet assurance; that in the combined sympathies, wisdom, enlightenment and power of the nations he should indeed feel that the great heart of the people would not let the soldier die." D.

THE WORLD'S FUTURE—A PROPHECY.

I BELIEVE that a time is approaching when terrestrial nature, at least, will be in almost complete subjection to mankind. Man will then indeed be "the lord of creation." The deserts will be turned into inland seas, or converted by irrigation into fertile and fruitful plains. The swamps will be ditched and drained until they become the very gardens of the earth, and the planting of malaria-destroying vegetation and other sanitary precautions will render them as healthful as the most salubrious locations. A similar plan to that so successfully pursued in Holland will reclaim vast areas from the grasp of old Ocean. Steep mountain sides will be terraced up to the very verge of the snow line and sustain a teeming population. Immense numbers of human beings will live on floating islands and boats on the surface of the lakes, streams and inland seas.

For a time will come in the history of the world when its population will be so great that every foot of available space will be utilized; and that, too, to its greatest possible capacity. This will be brought about by the abolition of war, of wide-spreading epidemics, by improved sanitary conditions generally, and by co-operative living and working by which the strain on the individual will be lessened, and communities will be made mutually supporting and helpful. The abolition of war will be brought about—1. By the improved moral sentiment of the world by which war will be considered a crime. 2. By the intercourse and admix-

ture of different nations, races and peoples, by travel, commerce, emigration, intermarriage, and so on, by which the barriers to altruism, sectional ignorance and prejudice will be broken down and greater international harmony result. 3. By the invention of engines and methods of war so terribly destructive that men will desist from warfare in very terror of the awful means employed and their frightfully ruinous consequences to both sides.

The decreased prevalence of epidemics will be owing—1. To the improved general and individual health. 2. To the establishment of an International Board of Health who will continually attend to this very matter. 3. To the even distribution of people over the face of the earth (arising from the improvements in commercial and travelling facilities, especially aerial navigation, thereby rendering the accumulation of human beings at certain favored points unnecessary), instead of their being crowded into close and unhealthy cities.

The improved health of the people will be owing to two principal causes—1. To the increased knowledge and application of the laws of health, both by individuals and communities. 2. To the general abandonment by the medical fraternity of chemicals and poisons in the treatment of disease; they having by that time discovered that far simpler means are efficacious therapeutically. Of course, all the other good things of that golden age will also increase the average of human health by increasing the happiness of mankind.

One of the most important of the social features of the world's future will be co-operation; not the co-working of individuals against corporations, nor of corporations against individuals, or against each other, but the confederation of all the conservative powers of humanity against the destructive powers of nature. Co-operation, and not competition, will be the first law of society in the future. The degraded and barbarous people of the earth will gradually die out, or become absorbed by the dominant—probably Caucasian — race. The different branches of this dominant race will become more and more fused and amalgamated until they are all gathered together under one central government. This government will be essentially republican in its form, and all officers will be elected directly by the voice of the people; not by representatives or electors. This central government will busy itself exclusively with plans for international benefit; mere local matters will be left to the care of local officers. Inventive genius will make wonderful advancement in the future. The rapidity with which passengers and goods can be transported from one part of the world's surface to another will be limited only by considerations of comfort, convenience and safety. Man will by that time have conquered the atmosphere, just as he long since conquered the ocean, and aerial navigation will be a fixed fact and the most popular mode of travelling. The whole world will be like a vast city, with splendid macadamized streets traversing it in all directions. Various cheap, safe and portable motors will be by that time discovered by which carriages and velocipedes will be propelled and animal power entirely superseded. Theoretical and practical science will do away with nearly all the dangers of ocean navigation, and a continuous system of moles and wharves will transform the entire coast line into one grand harbor. All impediments to river navigation will be removed, their channels deepened, and the banks defended by continuous levees and wharves. The rivers will be spanned by innumerable bridges, the mountains honey-combed with tunnels, and contiguous waters brought into relationship by deep canals. The weather and its probabilities will be so well understood and so thoroughly watched in those days that damage from storms will be comparatively rare. They and their courses and consequences will be predicted with as much certainty as eclipses are at present. Nothing will be easier, cheaper, or safer than travelling in the world's future. Messages will be

sent round the globe with the rapidity of thought, and men will converse audibly with their antipodes. The art of writing will become obsolete. Men will talk, and a listening instrument will write down their messages. Speeches will be reported by the same means. Not only words, but pictures also will be sent by telegraph, that men can see, as well as converse with unknown correspondents.

Photography will make great advances in the future. Pictures will be taken on any kind of paper without special preparation in the natural colors of the object depicted. Books and periodicals will be illustrated in this manner, and hand-engraving will cease to be.

The English language will, in time, be the only one, but so thoroughly will it be revised, systematized and simplified that it would be hardly recognizable by the man of to-day. Pronunciation will be uniform throughout the world, and spelling will be uniform and phonetic. No person, place, or thing will be allowed to have more than one name, thus obviating all necessity for a special scientific nomenclature and for the vast amount of useless memorizing now necessary.

Gold and silver will be too abundant to be especially valuable, and the world's money will be exclusively paper; waterproof, fire-proof and non-tearable. The denominations will be expressed on a decimal scale, and only one kind of money will be used the world over. Its basis will be the assessed value of the property possessed by the world's inhabitants. The metric system of weights and measures will also be universally adopted. Cremation will entirely supersede interment as a means of disposing of the dead. Artificial light and heat will be mainly furnished by electricity, and by its use the nights will be rendered as luminous as day.

As man extends his dominion over the face of the earth the other members of the animal kingdom will be gradually exterminated. The dangerous carnivora will be the first to go, soon to be followed by the rest of the wild quadrupeds and the dangerous reptiles. Then the domestic animals one by one will join the funeral march, for when human beings fully realize that the same ground that will keep a cow or a horse will just as easily keep a man, the days of the larger domestic animals will be numbered. The foul and unwholesome pig will be the first brute to disappear, and as the motive powers before alluded to come into use, men will cease to keep draught animals. The elephant is too ponderous and unwieldy a brute to survive. Reclaiming the deserts will do away with the camel. The air-ship will climb mountains easier and faster than the llama. Sheep and goats because of their fine fleeces, delicious flesh, and the small amount of food they require will hold their own probably for a great length of time. But as superior vegetable fibres are discovered to take the place of wool, and human beings demand more land, they will be crowded out. Traps, poison and ferrets will exterminate rats and mice, and the untamable sleep-destroying cat having no further business in this world will leave it.

The larger breeds of dogs will disappear with the beasts they are used to hunt, and only the smaller kinds will be left. But the dog will never be entirely exterminated. Hydrophobia will be easily cured in the future, and their affection, intelligence and fidelity will always secure the preservation of the smaller breeds of dogs. In short, the time will come in the world's history when the dog will be the only surviving quadruped.

Fish culture will be enthusiastically carried on in those days, and all waters will teem with them. Harmless and insectivorous birds, too, will be protected and petted till they swarm to such a degree that their numbers will have to be lessened by legislative action. The habitat of various birds will be judiciously enlarged; thus, nightingales will be naturalized in North America, bobolinks in England, and canaries everywhere. The gayly-plumaged birds of the New World will be exchanged for the sweet singers of the Old till an equilibrium is estab-

lished. Domestic fowls, too, will always be raised and kept for pleasure and profit.

After all this the reader will not need to be told that the man of the future will be a pretty strict vegetarian.

This same survival of the fittest will have its effect on the vegetable as well as on the animal world. As a matter of course, there will be no forests in the future; the world will be too thickly inhabited for that, and many of the common forest trees of the present will then be extinct, or will only survive in the botanical gardens. Trees valuable for their fruits, nuts, flowers, or ornamental appearance will be the only ones allowed to grow. Such being the case, wood will not be as much used in the manufactures of the future as in those of the present. Paper and various metallic and mineral substances will largely take its place. Houses will be made—those of the cheaper class—mainly of paper and glass; but brick, tiles, iron and artificial stone will be the usual materials of the best buildings. Furniture will be made of paper, artificial wood and metal. The popular use of tobacco will be entirely abandoned within the next two centuries; of alcohol within half that time.

Women — throughout the civilized world—will be admitted to equal political privileges with men within the next fifty years. Crime in the future will be reduced to a minimum, for not only will the moral sense of humanity be greatly improved, but the efficient detective force and wonderful telegraphic facilities of that time will render escape from the law almost impossible. Society in that day will endeavor to reform and redeem the criminal, and not merely to protect itself against his assaults or to wreak its vengeance upon him.

Then, too, Phrenology will take its proper position. It will be taught in the schools as a branch of Physiology, and the phrenologist will be considered as indispensable a member of society as the pastor or physician. The mother with her child, the lover with his betrothed, the teacher with his pupil, the politician with his candidate, all will seek his advice, counsel, or support. In the church, the school, the sanitarium, the dissecting room and the laboratory; in the legislative halls of the nations, and in the sacred precincts of home, phrenology will be applied, taught and respected,

The religious creeds and sects of the present will fade away into indistinctness in the future, and men will be united in a pure monotheism. Atheism will be almost unknown, and a reverent practical faith the rule. Because of these surroundings and these influences the average men of the future will be such beings as the world nowadays seldom sees. Wise, healthful, pure and holy, beautiful in face and form, they will appear angelic rather than human, and the earth will seem a primary heaven. J. WILLIAM LLOYD.

STUDIES IN COMPARATIVE PHRENOLOGY.

CHAPTER XI. (*Continued*).

RELATION OF SKULL AND TRUNK—RACIAL TYPES; CRANIAL STRUCTURE, AND MENTAL CHARACTERISTICS.

THE scope or our discussion being necessarily limited to the brain and skull, we are precluded from studying the very interesting analogies in the general structure subsisting between man and the ape and other animals. Our survey of brain and its osseous investment would, however, be scarcely complete did we not give some attention to the manner in which the head of man and the higher mammals is secured to the trunk—as that in itself indicates a by no means unimportant type of structure, and bears a special relation to grade of

development. Man is the only creature that walks strictly upright, and so depends entirely upon his feet and lower limbs for support in the erect attitude. The manner in which his cranium is joined to his spinal column has much to do with this attitude, for it is found on examination that the condyles, or articular surfaces of the skull, and the atlas of the vertebral column are horizontal, when the body is erect, and they are so placed that a line drawn perpendicularly from the center of gravity of the head would fall between them. Hence, the skull, resting vertically upon the spinal column, is almost perfectly balanced. The great opening, or *foramen magnum*, through which the spinal cord passes, is not placed directly in the center of the base of the skull, but a little back of the middle transverse diameter, apparently to compensate for the greater weight which the cerebellum adds to the posterior region of the brain, as well as for the greater specific gravity of the posterior lobes and of the skull, they being constituted almost entirely of solid matter, while the anterior parts of both the brain and skull contain many cavities and openings. There is, however, a little overcompensation, the head being inclined to drop forward when the muscles are relaxed; but this is obviated by the larger size and greater number of the muscles attached to the head back of the condyles.

Fig. 248.—The Chimpanzee.

On turning to the skull of the chimpanzee, or orang, it is seen that the *foramen magnum* is situated in the posterior third of the base of the skull, and in animals of lower type this opening is placed still farther back, the retrocession increasing until it is nearly in a line with the longest diameter of the skull, as seen in the horse. In correlation with the posterior situation of the foramen, the head is held in a direction more or less oblique, the plane of the condyles being correspondingly oblique, so that the head when placed upon the vertebra, if not sustained by muscular attachments, would, by its weight, be carried forward and downward. In man, the condyles make a trifling angle with a horizontal plane; in the orang, they are set about 37°, while in the horse the plane of the condyles is nearly vertical—making the angle not far from 90°. The rounded surface of the condyles in these animals intimates the dependence of the head upon muscles to sustain it in position, and nature has made abundant provision to that end by supplying a thick and strong ligament, arising from the dorsal and cervical parts of the vertebral column, and inserted in the most prominent part of the occiput. This ligament, the *ligamentum nuchae*, is comparatively very small in man.

The position of the face also sustains a correspondent relation to the attitude in man and the lower animals. In the for-

mer, it lies in the same plane with his forehead, his mouth, and chin, having but little projection in the lower types of the race; while in the case of the quadrumana, the plane of the head and face is oblique, and the obvious direction in which its anatomy shows the head is to be carried, is only compatible with a natural attitude of body approaching the horizontal, or bent forward and sustained by the anterior extremities. From the peculiar manner in which the head is articulated with the spine, and from the obliquity of the condyles, the ape is enabled to assume the erect position, and to maintain it for a considerable time, but the awkwardness of its movement, and the ungainly appearance of the animal while in that attitude, soon convince an observer that the horizontal position is its normal one.

The erect attitude of man has a relation to the peculiar curvature of his vertebral column, its size, and development; a perpendicular dropped from the summit of the spine would fall upon the center of its base; while the structure of the articulations of the vertebræ varies in development, and is most admirably designed to protect the delicate substance of the brain against jar and concussion, and other common incidents of human activity. The chimpanzee and orang exhibit an arrangement of the spinal column in these respects manifestly different: it

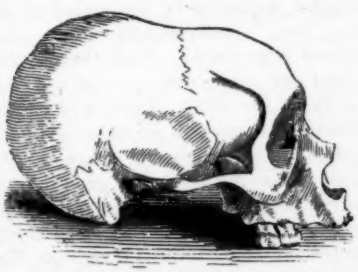


Fig. 249.—Negro Skull. Low Type.

being almost straight, and its development quite uniform throughout; powerful muscles above the loins, and connected with processes of the dorsal and cervical vertebræ, give it flexibility and strength. While in man the trunk is evenly balanced upon his pelvis, and he has no occasion for such powerful mus-

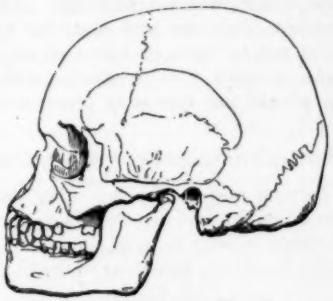


Fig. 250.—Negro Skull. High Type.

cles as those described, but as his weight rests upon a rather narrow foundation, and needs some muscular compensation which shall support him when in violent action, there are strong muscles and processes furnished for that very purpose in the lumbar region of the spinal column.

From the pelvis downward the structure of bone and muscle in man is adapted to his upright attitude, while the quadrumana, in the proportions of femur, tibia, and the constitution of the feet, show material variations from the human type, and thus account for their weak and imperfect carriage when erect. It should be noted, perhaps, that the gorilla, a lower species of ape than those mentioned, in point of intelligence, approaches closer to man than the others in the structure of his lower limbs and feet, nevertheless the erect attitude with him is more a makeshift, or a temporary expedient, than a natural, persistent one. But, after all, as a late writer says, "it is mere irony to compare our bones and brains with those of baboons, when we have arts and sciences to show which seem to affiliate us to higher intelligences, such as many have called angels and gods. The surprising faculties which we possess seem not to be the result of our material organization, or of merely natural evolution, but to have been divinely implanted, and to have contributed greatly to the

production and perfecting of the frame we tenant. It is impossible to deny that the body influences the formation of the mind, but it is no less certain that the mind in part modifies the body." As Sir Matthew Hale has well said, the body could not be reduced into that orderly frame in which it is constituted without the plastic and formative power of the soul.*

RACIAL PHRENOLOGY—THE AFRICAN.

Turning now to the more legitimate current of our investigations, we purpose to review in order the typical races, or species of mankind, according to the indica-

Fig. 251.—Native Negro.

tions of their temperament and cranial structure. Many classifications have been made by ethnologists, some, like Cuvier, dividing the family of man into three grand divisions—Caucasian, Mongolian, and Negro; some, like Buffon, dividing it into five, and others finding reason to distribute it into more numerous classes—Agassiz, for instance, defining eight, and Dr. Pickering eleven. Blumenbach adopted Buffon's distribution, and improved it much by a more definite setting forth of racial difference upon special characteristics found in skull, hair, and complexion, and as Blumenbach's system has obtained a wide popularity, and contains many features commending it to the phrenological observer, we shall follow it for the most part.

According to this system man is divided into five principal classes or races—Caucasian, Mongolian, Ethiopian, American, and Malay. The lowest, mentally and physically, in the series, is the Ethiopian, or Negro, the type of whom, employed here as a subject for comparison, is found in Central and Western tropical Africa. In a previous chapter a careful estimate of the brain of the Bushman was given, and as that is a subsidiary type of negro, it will be unnecessary to enter very minutely here into the consideration of the negro encephalon. Joined to a body of good size and weight, although rarely attaining the height of six feet, the negro has a small head, its average circumference not exceeding twenty-one inches, while the thickness of the vault of the cranium, and the lateral compression, reduce its internal capacity much below the estimate which would generally be made by an observer from a brief inspection of the exterior. The osseous development is such as to render the negro skull, according to a table furnished by Dr. Prichard, the heaviest of all racial types. The forehead is narrow and depressed; the occipital region is broad and well-developed, while the mid-lateral region is flattened, and the posterior occipital greatly prolonged, the head, therefore, appearing narrow between the temples, expansive in the region of the ears, and extraordinarily long when viewed from above. Prof. Owen states eighty-two cubic inches as the mean capacity of the skull. Virchow, who distributes the races in accordance with a system referable to the shape of the skull, places the negro in a group designated as *dolicocephali*, or, the long-headed, and, with the Australian, the negro represents the extreme form of the group. The dome, or vault, is arched, but dense and thick in consistency, and rising highest at a point somewhat back of the juncture of the sagittal and coronal sutures, where it is salient or ridged; it is depressed in the center of the crown, but rises some-

* "Origination of Mankind."

what in front of the coronal suture. The supra-orbital ridges are prominent, and the base of the brain, especially in the occipital lobes, is largely developed. In correspondence with this type of organism, the physical qualities of the negro are strong, his social instincts and passions are powerful, while the intellect is weak in reflection, and the appreciation of logical relations — in fact, decidedly puerile in some tribes. Yet the moral elements are not wanting, as shown by the negro's ready acceptance of missionary teaching, and his substitution of Christian worship for the practices of a degraded superstition. In the child, the play of the perceptive faculties is specially interesting, so quick are they to notice anything novel, and so prompt in acquiring bits of elementary information. In this respect they do not suffer much in comparison with white children, and it is only after they have reached the age of twelve when the reflective powers of the white begin to come into active co-operation with the perception that the negro falls behind. The typical woolly-haired race has done nothing in the field of thought worthy of note as aiding the progress of man; it has "never invented a reasoned, philological system, formulated an alphabet, framed a grammatical language, or made the least step in science and art." Its faculties, especially of the intellect, therefore, are inferior and dormant, rendering the mind defective in originative, inventive, and speculative capacity. The moral elements are more marked, and susceptible of much development under discreet instruction, while in his native condition their unformed, yet influential, growth renders him superstitious and fanatical to an extreme degree. So, too, his untrained social affections, being related to the strongest physical elements in his cerebral organism, render him social, domestic, affectionate, devoted, hospitable, yet sensual, revengeful, exacting.

The temperament of the negro, although intellectually sluggish, is such as to render him susceptible to physical influence, and his phases of feeling are expressed in movement and language with freedom, his dormant intellect and untrained moral nature exercising no regulating or repressive control over the passional instincts, which, under excitement, carry him to an amazing expression of reckless destructiveness. He is, therefore, in most of his mental characteristics, a child, in lack of facultative balance, and his relations with the higher nations have demonstrated his inferiority, being made their slave or servant in the most remote times, and at this period; and although representatives of the negro family have been living for two hundred, or more, years amid the environment of the best European and American society, he has only in isolated cases indicated a disposition to rise above a state of contented subjection. Dr. Prichard claims that, under proper guidance, the negro could be developed up to the standard of the civilized and refined European, in spite of the indications of history, which show him as a class, to be everywhere a sensual, good-natured, careless being, when not under the dominion of excited passion, incapable of applying his energies to any high and ennobling pursuit without the supervision of a representative of another race.

ASIA.

Oh, mother! wherefore speak the name of death?
Cease they to love, and move, and breathe, and speak,
Who die?

THE EARTH.

It would avail not to reply:
Thou art immortal, and this tongue is known
But to the uncommunicating dead.
Death is the veil which those who live call life:
They sleep, and it is lifted: and meanwhile
In mild variety the seasons mild
With rainbow-skirted showers, and odorous winds,
And long blue meteors cleansing the dull night,
And the life-kindling shafts of the keen sun's
All-piercing bow, and the dew-mingled rain
Of the calm moonbeams, a soft influence mild,
Shall clothe the forests and the fields, aye, even
The crag-built deserts of the barren deep,
With ever-living leaves, and fruits, and flowers.

SHELLEY.

SIR ISAAC NEWTON.

"THE name of Sir Isaac Newton," says his biographer, Brewster, "has by general consent been placed at the head of those great men who have been the ornaments of their species. However imposing be the attributes with which time has invested the sages and the heroes of antiquity, the brightness of their fame has been eclipsed by the splendor of his reputation; and neither the partiality of rival nations, nor the vanity of a presumptuous age, has ventured to dispute the ascendency of his genius." To this high panegyric nothing need be added.

Isaac Newton was born at Woolsthorpe, in Lincolnshire, England, December 25, 1642. In June, 1660, he was admitted a student of Trinity College, Cambridge. In 1669, he was appointed to the chair of mathematics there, on the resignation of the celebrated Dr. Isaac Barrow. In 1672, he was chosen a member of the Royal Society of London. In 1688, he was elected a member of Parliament for the university, and re-elected in 1701. In 1699, he was appointed Master of the Mint. In 1703, he was chosen President of the Royal Society, to which position he was annually re-elected during the remainder of his life. In 1705, he received the honor of Knighthood from Queen Anne. He died at Kensington on the 20th of March, 1727, and was buried in Westminster Abbey.

The most important services that Sir Isaac Newton rendered to science lay in three different fields—optics, physical astronomy and pure mathematics. Prior to his time, the science of optics was not well understood. So late as the year 1699, Dr. Barrow, in his published lectures on optics, in accounting for the different colors, says, "*White* is that which discharges a copious light equally clear in every direction; *Black* is that which

does not emit light at all, or which does it very sparingly. *Red* is that which emits a light more clear than usual, but interrupted by shady interstices. *Blue* is that which discharges a rarified light, as in bodies which consist of white and black particles arranged alternately. *Green* is nearly allied to blue. *Yellow* is a mixture of much white and a little red; and *Purple* consists of a great deal of blue mixed with a small portion of red." Such was the state of this science when, in 1666, Newton procured a glass prism, "to try therewith," as he says, "the celebrated phenomena of colors." The display of the prismatic colors had often been observed before the time of Newton; but it was left for him to analyze the phenomenon, and make known its true cause.

The first thing that struck his attention in his experimenting was the fact that the colored spectrum on the screen was not circular like the ray of light which he permitted to enter the darkened room, but that its length was not less than five times its breadth. He tried to account for this in various ways, and placed his prism in different positions, but the appearance was always the same. From a course of experimenting and observation that extended through several years, he discovered the great truth that light is not homogeneous, but consists of rays, some of which are more refrangible than others. This is the grand principle upon which all our modern science of optics is based. One of the first fruits of this discovery was the construction of the first reflecting telescope ever made. This instrument was fashioned by Newton's own hand, and presented by him to the Royal Society of London, in 1671. His further investigations in the field of optics had reference to the recomposition of light, the colors of thin plates, the colors of natural bodies, etc.

At the same time that he was occupied with his experiments in optics he was led to investigate the causes of the planetary motions. At this time, the complicated system of Descartes was the generally accepted theory. Newton, from reflecting upon the philosophy of falling bodies upon the earth, was led to extend the influence of the earth's attraction to the moon. From deep and long-continued investigations, he discovered the fact that the force of gravity which regulates the fall of bodies on the surface of the earth, when diminished by the square of the moon's distance from the earth, is almost exactly equal to the centrifugal force of the moon in her orbit. The result of this equilibrium of these two forces acting at right angles to each other, is to cause the moon to describe a curve more or less elliptical around the earth. As, in the progress of his calculation, this truth began to appear, Newton was so overcome by emotion that he was not able to finish the work, but was obliged to entrust it to a friend for completion. This principle once established as far as relates to the moon, was easily carried out to all the planets, and applied to the earth itself to account for its revolution around the sun. This great principle of universal gravitation, that every particle of matter in the universe is attracted by every other particle of matter with a force inversely proportional to the squares of their distances, is one of the most important discoveries ever made in the realm of science.

It has not taken long to relate the history of this grand discovery; but the years were many and laborious from the first conception of the idea until its complete development. It was in the year 1666 that the matter first occurred to his mind. He was sitting at the time in his garden at Woolsthorpe, his native place, to which he had retreated during the great plague in London. It is a popular tradition that it was the falling of an apple from a tree under which he was sitting that first drew his attention to this subject. His biographer, Sir David Brewster, says nothing of the apple, in his life of Newton. It was not until the year 1683 that he was able to see clearly the grand truth according to which the planetary motions are effected. The course of these long years was marked by

many disappointments and failures in his calculations, the results of imperfect or inaccurate data. The discovery of this grand law was Newton's greatest work in the realm of physical astronomy. His further labors in this field were directed toward determining the figure of the earth, the cause of the tides, the motions of the moon, etc.

It remains to speak yet of Newton's work in the field of pure mathematics. It is no doubt within the bounds of truth to say that he possessed the most wonderful mathematical aptitude of any man of whom we have any record. As evidence of his ability take the following: In January, 1697, John Bernonilli submitted the two following problems to the most distinguished mathematicians in Europe, challenging them to solve them:

1. To determine the curve line connecting two given points which are at different distances from the horizon, and not in the same vertical line, along which a body passing by its own gravity, and beginning to move at the upper point, shall descend to the lower point in the shortest time possible.

2. To find a curve line of this property that the two segments of a right line drawn from a given point through the curve, being raised to any given power, and taken together may make everywhere the same sum.

"On the day after he received these problems," says Brewster, "Newton addressed to Mr. Charles Montague, the President of the Royal Society, a solution of them both. He announced that the curve required in the first problem must be a cycloid, and he gave a method of determining it. He solved, also, the second problem, and he showed that by the same method other curves might be found which shall cut off three or more segments having the like properties." The real difficulty of these problems may be judged by the unmathematical reader from the fact that Leibnitz, one of the most celebrated philosophers and mathematicians of that age, asked that the time for solving the second problem alone, which had been fixed by Bernonilli at six months, should be extended to one year.

Again, in 1716, Leibnitz submitted a problem for the purpose, as he said, "of feeling the pulse of the English analysts." The requirement of the problem was to determine the curve which should cut at right angles an infinity of curves of a given nature, but expressible by the same equation. "Newton," says his biographer, "received this problem about five o'clock in the afternoon, as he was returning from the Mint; and though the problem was extremely difficult, and he himself much fatigued with business, yet he finished the solution of it before he went to bed."

Such was the mathematical genius that Newton brought to bear upon some of the most difficult subjects in the domain of this science. Many of these subjects had puzzled mathematicians from the days of Archimedes; but before the genius of Newton difficulties melted away like frost-work in the blaze of the sun. His most important achievements in the science of pure mathematics was the discovery of the Binomial Theorem, the Calculus of Fluxions and the Quadrature of Curves.

These are but a few, though they are among the most distinguished of the labors of Sir Isaac Newton. He was not always right. Later researches show that he sometimes erred; but had it been otherwise he would have been more than human. While wrong in some of the principles which he believed he had discovered, and sometimes in the details of his operations, yet the great bulk of his work will stand the test of the ages to come, as they have stood the criticism of the century and a half that have passed since his death. Truth is immutable; and science that is based on truth can never be shaken. Newton's contributions to the sum of human knowledge have perhaps never been equaled by those of any other man, and well entitle him to the inscription on the pedestal of his statue in Trinity College—*Qui genus humanum ingenio superavit.*

T. J. CHAPMAN, A.M.

NATIONAL REVERENCE.

IN all ages of the world man has instinctively bowed in the presence of that which came before him as being of higher worth. In the cromlech and the altar, in palatial structure and the marble shaft that pierces the blue ether in commemoration of the mighty dead, and pre-eminently on the historic page this is abundantly attested. It is a principle that wields an influence over the whole domain of the moral and spiritual life of humanity, and though it comes to its highest manifestation in the attitude of man toward his deity, in his religious development, yet there is another sphere in which its working is deep-seated and powerful, and pregnant with weal or woe; it is in the relation of man to the nation.

In the nations of antiquity there prevailed a peculiar impression of reverence that history has not witnessed since. But it was a reverence that was blind and servile, and it became a mighty power for human misery. Under its protection arose the most relentless tyranny and the most grinding oppression. Whole nations were made a multitude of slaves, and millions of human lives came upon the earth, toiled, and passed away with apparently no other mission than to gratify the ambitious and arbitrary whims of a depraved monarch. It was this principle that rendered possible the erection of those stupendous architectural structures that sprang up in the ancient countries, many of which have sunk into ruin, while others like the colosseum at Rome, the Assyrian temples, and the hoary pyramids, still stand as lasting monuments of the crying wrongs which men suffered in those early times.

Scarcely less binding was this spirit of reverence in mediæval times. Then, too, it acted as a power to close the mouths of the multitude against the hand of their oppressors. Under its influence the abject vassal paid the most abject allegiance to his feudal master, and the starving peasant drained his very life-blood in order to add his mite to the luxurious pomp of the noble. Faith in the divine right of kings reared a wall of sanctity around the monarch's throne, which protected him in the basest avarice, the foulest debauchery and the most cruel oppression. It was an age of mute obedience and fanatical devotion, and an age of grinding despotism; it was an age that exalted kings and nobles, an age that trampled in the dust all the inborn rights of man.

But there came a mighty reaction in the life of the world. Among the memorable events which the nineteenth century has hitherto witnessed none stands out so nobly prominent as the extinction of human slavery. As if stirred by a divine impulse, all the nations of the civilized world have vied with each other in abolishing the unholy traffic, and the air of freedom is at this moment fanning the brows of millions who once groaned under the heavy yoke of bondage. Yet this general emancipation from bodily servitude is but the latest result of that widespread and sweeping tendency which has made the whole course of modern history one vast movement in the direction of freedom. The great Reformation of the sixteenth century, which marks the turning-point between mediæval and modern time, was the signal for the gradual breaking-up of that blind and abject reverence, that spiritual slavery which has brooded over the past, and stands out as the glorious prelude to all succeeding steps in the emancipation of thought, speech, and action. One by one the restrictions and oppressions of former days have been swept away. Old institutions, old beliefs and old grooves of thought have yielded to a new order of things. Kings and nobles have come to occupy less and less space in history. Self-government is hailed as the highest order of national life. The boast of the monarch, "I am the State," has been ingloriously hushed, and the aphorism, "The people rule," is making itself powerfully felt. And no longer is government

recognized as existing for the glory of the governor, no longer for the pomp and pleasure of the few, but for the good, the safety and the sacred rights of all.

Yet, though this march of freedom is a glorious advance in the life of humanity, it has not been an unmixed blessing. The mighty reaction against the blind and baneful reverence of the past has flung the age into a still more baneful tendency toward *no* reverence. In the widespread hate and contempt for the things of the past, for its institutions, its beliefs, and its customs, there arose a spirit of positive irreverence. This spirit, like a desolating stream, has come down through modern history, at times breaking out in the wildest turbulence and the most wanton overthrow, but generally gliding along and silently, but surely undermining the main-stays of society, and sapping the very vitals of national order and life. England has felt its withering influence in the wild political storms that swept over her history; she has writhed under its presence in the fierce outbreaks of lawlessness and anarchy. It was this spirit that reigned in the dire commotions of infidel France, this spirit that in the tragic horrors of the French Revolution rose to a diabolical form.

And this spirit of irreverence has spread to our shores. Although its influence here has not been manifested in stormy outbursts of violence and anarchy, it is none the less really present. Its work is a gradual and stealthy *weakening of due regard for the higher powers in the constitution of the State.* Where is the veneration for our country that inspired our fathers? In the utilitarian, materialistic spirit of the age, men have come to look upon government merely as a human compact for mutual benefit, and they revere it only as such. Statesmen and public officials, instead of thinking reverently of their functions, pervert them into instruments of expediency and emolument. The law-maker in the legislative hall, the executive in his capitol, and the justice upon the bench, thus tend to become the servants of policy or political faction. Are not our national holidays profaned with revelry and excess, rather than hallowed with grateful remembrances of the past? And was not our national centennial—that gala-day of the Republic—rather a grand encomium on the steam-engine and the telegraph than an expression of gratitude for the blessings of the past and of renewed vows of national love and allegiance in the future?

Our Republic, as we believe, is at this day in the van of the nations. All the emancipative movements of modern history commingle here, and here free inquiry and free institutions have reached the highest and purest development yet achieved. But there is lacking a reverence for the State which *must* exist for its well-being. And it is a reverence that is not incompatible with freedom, but in deep harmony with man's freest, highest life. The nation is not an outward compact of men, but a divine institution ordained of God for a sublime purpose. It is more than an organization of society for the protection of property and life. Before organized society existed, the order of the nation was decreed as a power to promote that exalted love and fellowship which is the supreme good of man. As such it challenges the reverence of mankind—not the abject reverence of the past, but that which freely flows from an enlightened recognition of superior worth. As man is prompted by his inner nature to bow before the higher, as he is bound to revere his parent or his Creator, and as he is a fallible, imperfect being, so it is his duty to revere the nation. Reverence is the binding power in the nation. It is the true centripetal force that holds its elements in obedience and order. Though the benign decentralizing tendency of the present age be carried to its utmost limits, though confederation be established as the order of national life, though the individual stand forth in sovereign independence, reverence is the sacred bond that can unite all into one life. In his ideal Republic Plato spoke longingly of harmony as a chief good in the life of the nation. That harmony, that beautiful

working together of elements and powers from the lowest to the highest, it is the peculiar mission of reverence to create.

Sweep away this reverence, this moral restraint in the nation, and you throw open the floodgates to disorder, dissolution and death. What constituted the sure preparation for the wild anarchy that once existed in England, for the Reign of Terror in France, for any violent uprisings in the history of the world? It was the nearly complete extinction of all reverence for the established order of things, of all respect for the higher powers in the constitution of the State. Anarchy is a deeper wrong than despotism. It is a revolt against the first of all laws, the law of order. Should the centripetal and centrifugal forces of the heavens be loosed, and the blazing orbs go crashing against each other in space, the chaos would be inconceivably terrible; but more terrible and more hateful, because it involves spirit, is a chaos in human society.

As in all other most vital human interests, so here the redeeming power is religion. Religion is the cradle of that true reverence for "principalities and powers," which is indispensable to the welfare of the nation. It fosters that noble respect for man as man, and for man as ruler which is the foundation of social harmony and prosperity. It humanizes man. Therefore the nation can not with impunity neglect religion. All history bears witness to this. The very constitution of man implies it. And when religion is accomplishing its work in establishing the true relation of man to the State, the State in a reciprocal way fosters the interests of religion, and thus becomes in an eminent degree a power whose influence does not end with time, but will be felt in the hidden relations of eternity. Statesmen, reformers, and philanthropists have exerted themselves without stint for true national welfare. Good men like Penn, Locke, and Channing, have bestowed their earnest effort and best talent, have longed and prayed for a nearer approach of nations to their ideal state; and all men, when once they shall understand and feel the true significance of the nation will make duty to country second only to duty to God.

HORACE EGMONT.

ALEXANDRIA.

THE educated world, especially that part of it that is given to the study of history, and all who take an interest in ancient things, learned with regret of the bombardment of Alexandria by English guns, and of the wanton destruction by fire and pillage which followed. The record of this most important Egyptian city is worthy of much study. From its foundation by the great Macedonian conqueror in 322 B.C. to the present day it has passed through a series of remarkable experiences. In the days of Greek glory, in the palmy days of Rome, and when the Saracen was a mighty influence, Alexandria was a leading city, commercially and politically. Learning flourished there in the early centuries of our era, and Greek and Roman princes, ecclesiastics, and philosophers contributed to its importance. Especially was it famous in the days of the Ptolemies, who made it, next to Rome and Antioch, the greatest city of ancient time. Alexander selected its site probably on account of its defensive advantages, and also because of the fine approaches from the sea and the harbors it possesses. The projecting portion of the city, seen in the engraving, is called the Pharos, on account of the wonderful light-house which once stood upon it, and was formerly an island, and in ancient times a refuge of Greek and Phœnician pirates, a fact commemorated in the name "Pirates' Bay," given to a deep indentation on the north side of the island, and on the mainland was the little town of Rhacotis, subsequently incorporated in the quarter of that name.

The city grew rapidly from its begin-

ning, and extended along the low land which separates Lake Mareotis from the Mediterranean, reaching the zenith of wealth and influence a little before the advent of Christ. Its population, according to Diodorus Siculus, numbered then 300,000 free citizens, but a third, or at the most, one-half of the entire number.

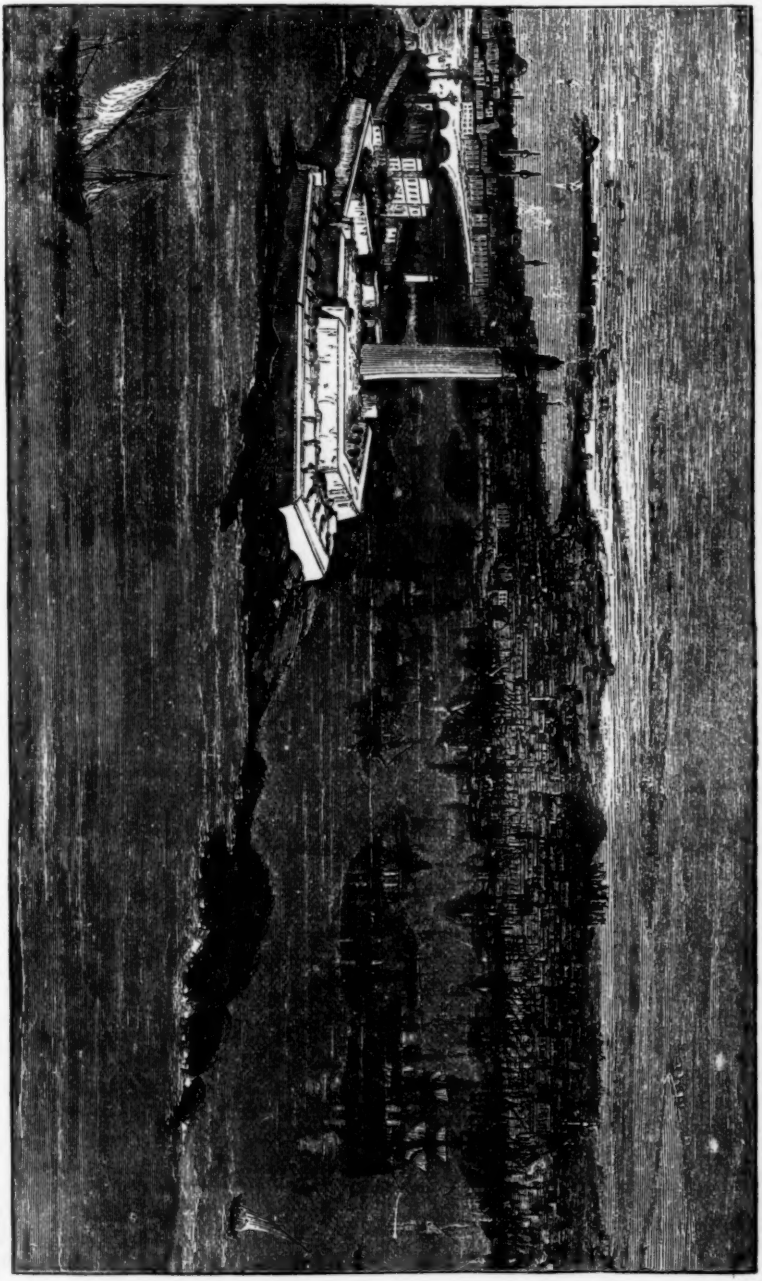
But its decline, at first almost imperceptible, became rapid. Parts of the city were laid waste. Many of the works of art were removed to Rome. The rival city of Constantinople began to rise in importance. By the fourth century no building of importance was left except the temple of Serapis. That was stormed by the Christians in 389 A. D., and converted into a Christian church. In 638 the city was taken by the Arabs, and in 868 it was conquered by the Turks. Under the Egyptian caliphs it revived somewhat, and during the Middle Ages was an important emporium of trade between the East and the West. But the dominion of the Mamelukes, the diversion of the East India trade to the route by the Cape of Good Hope, and other agencies, operated to destroy what had been gained. A century ago the population had dwindled to about 6,000.

EGYPTIAN WATER CARRIER.

The modern city, as it appeared before British guns and Arab incendiaries reduced it in great part to ruins, owed its growth to Mehemet Ali and his successors. Mehemet Ali was sent to Egypt by the Turkish sultan early in this century, and he administered the affairs of Egypt with vigor and independence. Only by the intervention of England was he brought to acknowledge the sovereignty of Turkey and to pay an annual tribute.

Mehemet Ali died in 1848, and in 1863 Ismail Pacha, nephew of Mehemet's son, became Viceroy, receiving in consideration of additional tribute the title Khediv-el-Misr, or, King of Egypt. Ismail spent a great deal of money, which he wrung from his own people and borrowed from Europeans, on himself, his palace, and harem, and also in an extensive system of improvements with the view to introducing at one stroke the full current of European civilization. In twelve years he had borrowed $500,000,000, one-half of which was invested in public works such as railroads, steamships, irrigating canals, a postal system, a reorganized army, the harbors at Alexandria and at Suez. The other half had gone in commissions—no small part of it to Europeans—and in stealings. When it came to paying these enormous debts the trouble began. The Khedive could pay the interest on his bonds only by selling his shares in the Suez Canal to the English Government. This was in 1875.

A VIEW OF ALEXANDRIA AND THE OUTLYING COUNTRY BEFORE THE SIEGE.



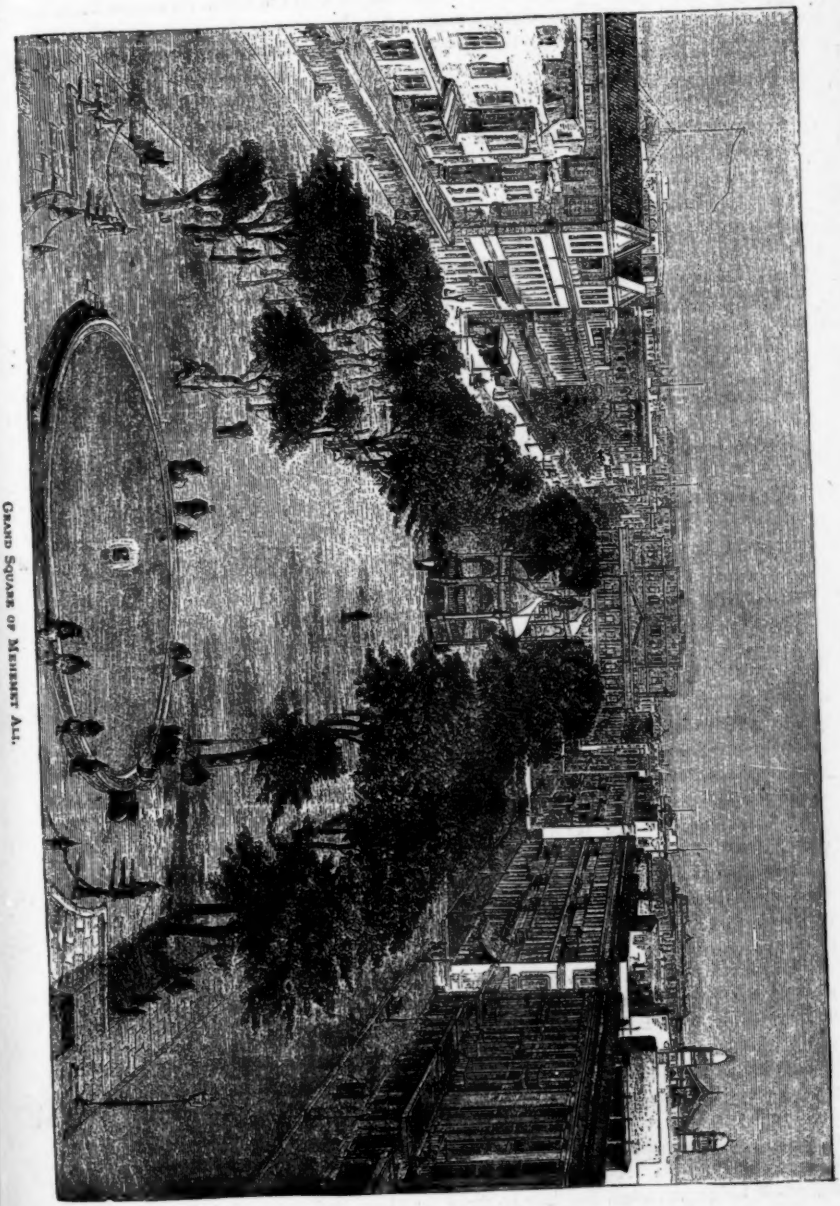
A View of Alexandria and the Outlying Country before the Siege.

It led to the establishment of a European Commission—English and French—to arrange Egyptian finances, particularly with a view to secure the prompt payment of the interest to the bondholders.

No wonder that when deposed he could retire to a palace in France with a fortune of a hundred millions or more.

Alexandria has two ports, an eastern and a western. The latter, called also the Old Port, is by far the larger and better of the two. It extends from the town westward to Marabout, nearly six miles, and is about a mile and a half in width. It has three principal entrances. The first, or that nearest the city, has about seventeen feet of water, but is narrow and difficult of access, and only used by small vessels and boats. The second, or middle, which is also the principal entrance, is about a quarter of a mile wide, and has, where shallowest, twenty-seven feet of water. The eastern side of this entrance is marked by buoys, and there are landmarks for guiding to the channel. The third, or western, entrance has its western boundary about three-eighths of a mile from Marabout Island, is about half a mile wide, and has from twenty-five to twenty-seven feet of water where shallowest. Within the harbor ships may anchor close to the town in from twenty-two to forty feet of water. Further improvements were in course of construction by a firm of English contractors (at a cost to the Egyptian Government of little short of ten millions), and would eventually have rendered this one of the finest and most capacious harbors on the Mediterranean. Among these is the formation of a breakwater, extending in a southwesterly direction parallel to the

A Bedouin of the Desert.



GRAND SQUARE OF MEHEMET ALI.

shore for 2,550 yards southwest of the light-house on Cape Eunostos; a mole, springing from the shore, and extending in a northerly direction for 1,100 yards, and having a width of about 100 feet; and the construction of nearly three miles of quays and wharves, for vessels of the largest size, and with railway connections.

The native and European sections of Alexandria presented a strong contrast. In the former the streets were narrow, irregular, and filthy, and the houses mean and ill-built. The Frank quarter, on the other hand, presented the appearance of a European town, having handsome streets and squares and excellent shops. The streets had been much improved lately by being nearly all paved. The principal hotels, shops, and offices were situated on the Great Square of Mehemet Ali, the center of which formed a very agreeable promenade, being planted with trees, and well provided with seats. It had also a fountain at each end. In the suburbs were numerous handsome villas, with pleasant gardens. Among the principal public buildings were the palace of the pasha, the naval arsenal, the naval and military hospitals, custom house, bourse, two theaters, several mosques, churches, convents, etc.

The population of Alexandria was of a very mixed character, consisting, beside the native Turks and Arabs, of Armenians, Greeks, Syrians, Italians, French, English, Germans, etc. In 1840 it did not exceed 60,000, but in 1880 had increased to over 250,000, about one-fifth being Europeans.

THE DEATH WARNING.

THOSE who have read Charles Kingsley's most admirable historic novel "Westward," will remember the following, in the character of John Oxenham, who figures therein:

"He lifted the cup, and was in the act to pledge them, when he suddenly dropped it on the table and pointed, staring and trembling up and down, and around the room, as if following some fluttering object,

"There! do you see it? The bird! the bird with the white breast?"

Each looked at the other; but Leigh, who was a quick-witted man, and an old courtier, forced a laugh instantly, and cried:

"Nonsense, brave Jack Oxenham; leave white birds for men who will show the white feather. Mrs. Leigh waits to pledge you."

Oxenham recovered himself in a moment; pledged them all round, drinking deep and fiercely; and after hearty farewells, departed, never hinting again at his strange exclamation. After he was gone, and while Leigh was attending him to the door, Mrs. Leigh and Grenvill kept a few minutes silence. At last—

"God help him!" said she.

"Amen," said Grenvill, "for he never needed it more. But, indeed, Madam, I put no faith in omens."

"But, Sir Richard, that bird has been seen for generations before the death of any of the family. I know those who were at South Yawton when his mother died, and his brother also; and they both saw it. God help him! for after all, he is a proper man."

"So many a lady has thought before now, Mrs. Leigh, and well for him if they had not. But, indeed, I make no account of such omens. When God is ready for each man, then he must go; and when can he go better?"

I extract so much because it would seem to confirm the following, which I cut from a newspaper. Does it not seem to imply that the Oxenham gravestone is yet in existence, and supplied the incident of which Kingsley made use:

"In a graveyard near Exeter, England, was erected a memorial stone having these inscriptions:

"Here lies John Oxenham, a goodly young man, in whose chamber, as he was struggling with the pangs of death, a bird

with a white breast was seen fluttering about his bed, and so vanished. Here lies also Mary Oxenham, sister of the said John, who died the next day, and the same apparition was seen in the room." Then another sister was spoken of. Then, "Here lies hard by James Oxenham, the son of the said John, who died a child in his cradle a little after; and such a bird was seen fluttering about his head a little before he expired, which vanished afterward." At the bottom of the stone there was: "Here lies Elizabeth Oxenham, the mother of the said John, who died sixteen years since, when such a bird with a white breast was seen about her bed before her death." To all these things there were respectable witnesses, whose names were engraved upon the stone. Whether it is in existence now, we are unable to say.

E. O. S.

OFFICIAL MOURNING IN CHINA.—A correspondent of one of our newspapers, writing from China, describes the conduct of officials there when a parent dies, thus: "The mother of Li Hung Chang has died, and in consequence that eminent public servant has withdrawn temporarily from office. It has been known for some time past that the old lady, who was over eighty years of age, was in a very precarious condition, and speculation was rife as to the effect which the event might have on the political fortunes of her illustrious son. It is well known that Chinese etiquette strictly demands retirement from office for the space of three years on the death of either parent. To this there is hardly ever an exception. The theory is that the grief of the bereaved son is so inconsolable as to incapacitate him for his public functions, and, moreover, the sacred duties of attending to the funeral ceremonies and performing the sacrifices at the grave must necessarily absorb his time and attention. Whatever his rank or wealth may be, he must go about clad in a coarse hempen garment unstitched at the borders; he must sleep for forty-nine nights on the bare floor, with a brick for his pillow, beside the coffin; he must remain unshaved and uncombed for one-hundred days; and for the whole period of three years he can have no music or joyous event of any kind in his house. At such a time public duty must give way to private, and the official, no matter what his standing, who would omit to report the fact of his father's or mother's decease and request permission to retire would certainly incur grave censure, and probably be dismissed from office altogether."

RED JACKET'S PULPIT.

[*Respectfully dedicated to E. Cook, Esq.*]

Not far from the village of Havana, Schuyler Co., N. Y., there is a beautiful brook flowing through a deep and picturesque gorge, and falling in cascades over a ledge of rocks. One of these rocks resembles a platform and pulpit, and there it is said Red Jacket, the famous Indian chief, was in the habit of airing his eloquence after the manner of Demosthenes, in order to prepare himself to address his tribe. The following impromptu lines, written in part on the spot, may entertain the reader interested in the history of the red man:

I.

Charmed by the soothing music of water,
Down the ravine in silver spray falling,
Where the brook sings songs nature has taught her,
The gray past to the present is calling.

II.

Red Jacket the chief, so runs the story,
Spoke to tumultuous waves here under
The rostrum of rocks, and here came sweet Flora
With bouquets for the red son of thunder.

III.

He addressed the still trees, and the grasses
That raised here their green arms with emotion;
And to-day, the white cascade that passes,
Encores the speech and speeds to the ocean.

IV.

He toned his voice, to brook notes repeating,
From the soft to tempestuous measure,
That chimed with the nature of brave hearts beating
With anger, with sorrow, wonder and pleasure.

V.

Hushed his eloquence now and forever,
But his lesson we hear in those waters,
Whose speech to the winds in sylvan notes never
Ceases to praise the braves and their daughters.

G. W. BUNGAY.

MRS. BOWMAN'S NEURALGIA.

MRS. BOWMAN had suffered from a pain in her head for several days, but being a woman of courage as well as of affairs, she had kept her discomfort to herself, and attended as usual to her numberless duties. There was another reason why Mrs. Bowman was reticent on the subject of her neuralgia. The fact was, that knowing little or nothing about pain practically, this lady had formed and promulgated certain theories in regard to it that were not quite so easy to demonstrate when suffering herself.

"One-quarter of the pain that folks complained of was imaginary," Mrs. Bowman had often remarked. Another fourth was exaggerated, and still another that could be borne with much less fuss and outcry if people only thought so.

Mr. Bowman, an exceedingly quiet and respectful husband, had once been heard to say that he felt grateful to his wife for leaving the fourth quarter for the favored few to groan in and crawl out of. He hadn't yet reached a point where he could take advantage of her kindness and magnanimity; but it was all the same a comfort to know that the hole was there.

Mr. Bowman looked and acted like a man in feeble health. Mrs. Bowman declared him a confirmed and hopeless hypochondriac, and treated his aches and pains as the keeper of a lunatic asylum treats the whims and complaints of his patients. Mr. Bowman was subject to stitches. They caught him at the most inopportune times, and in the most unexpected places. Mrs. Bowman steered round this idiosyncrasy like the experienced pilot she was, and whenever a groan or a quick catching of the breath betokened that a stitch was in process of dropping, she either called her husband's attention to some business that must be immediately seen to, or asked a hasty question which required as hasty an answer. It is safe to predicate that not one of the exceedingly numerous stitches dropped in her presence and touched bottom without interruption. "The hypo," Mrs. Bowman said, "must not be encouraged, and there would be no limit to Mr. Bowman's imagination if she were to take the slightest notice of any of his ailments."

So the poor man dropped his stitches in public and in private, and picked them up again whenever he could get a good hold, and learned at last to substitute a wry face for the obnoxious groan, and later still to turn round when he made it.

There is probably no doubt but that this was good discipline for Mr. Bowman, but it gave him a certain grotesqueness and peculiarity of manner which was as annoying to Mrs. Bowman as the other disagreeable habit had been. Mr. Bowman did not like to go into company because, as in the case of "Mary and the Lamb," the stitches were "sure to go." But Mrs. Bowman was colonel, captain, and corporal, and Mr. Bowman shouldered his infirmity, as a good soldier his gun, and followed wherever she led.

It was very seldom that Mrs. Bowman allowed herself to be drawn into any conversation concerning the stitches, but sometimes on occasions of great importance it became necessary, and then the lady spared neither thread nor material.

Mrs. Bowman was all ready to go to a chamber concert one evening, when her unfortunate partner, in getting on his overcoat, dropped a stitch. It must have taken a very intricate and devious path, for it not only consumed more time than usual, but Mr. Bowman was even more aggravating and uncertain in his manner than he had ever been before; and when at last he had caught his breath, and brought his face into position, humbly begged to be allowed to stay at home.

When Mr. Bowman gave up the groan and took to making faces, his wife was really not so pleased with the change as he supposed she would be. A man might groan in a public hall, and only the near few be able to fasten the groan to the groaner, but it was quite out of the range of possibility for a man to rise, turn round, and make a series of grimaces—as Mr. Bowman inva-

riably did in those days—without attracting more or less attention. So Mrs. Bowman was sometimes absolutely compelled to reason with her husband about this "hypochondriacal idiosyncrasy," as she termed it.

"I should be very glad if you would allow me to stay at home," the poor man pleaded. "I don't like to mention it, but I really think I am fuller of kinks than usual this evening."

"It is perfect nonsense, Sylvester!" Mrs. Bowman responded. "So far, I have not lost one of those chamber concerts, and I don't intend to."

Mr. Bowman thought he could have a concert in his own chamber, if his wife would only leave him in possession, but Mrs. Bowman declared herself unable to even think of such a thing. "If you will only overcome that foolish habit of jumping and twisting your face," the lady said, "I might have some comfort in life; but I might as well live in the neighborhood of Vesuvius, for I never know what is coming next."

"I'd give you notice if I knew myself!" Mr. Bowman responded, getting inside his overcoat more carefully this time. "But I never have the slightest warning."

"Why don't you make yourself positive to these attacks upon your imagination?" Mrs. Bowman inquired. "You would use your will power if you thought as much of me and my comfort as you ought."

This was always the concluding idea of the concluding sentence of Mrs. Bowman's arguments. Whether or not she believed this is not known, but it was the theme of a variety of variations. There must be a screw loose somewhere to admit of such promiscuous dropping of stitches, and if anything could tighten it again, it would be a general ignoring of the disagreeable accident, with an occasional word to show her reason for so doing. The Bowmans had been married twenty years, and during ten of those Mr. Bowman had constantly dropped stitches. Mrs. Bowman had never been ill a day in her life. Everybody who had the least acquaintance with this lady was also acquainted with this fact. Mr. Bowman had heard this statement so often that he always knew just when it was coming. It was an introduction, an interlude, a climax. He had counted the words in the sentence, and the letters in the words, and repeated them over and over again to himself, till they had an alien and uncertain sound, and taken separately were utterly devoid of meaning. The general idea of his wife's robust, continued, and of course continual health remained, however. There was no way of twisting or perverting that. If Mrs. Bowman had been constructed in such a way as to make the dropping of an occasional stitch possible, it would doubtless have been a great help to her husband in disposing of his. But she wasn't. One would as soon think of Bunker Hill Monument with a "crick," as of Mrs. Bowman with an infirmity of this kind. But, as stated above, Mrs. Bowman had a headache. It was a hard and constantly developing headache. She bore it for four days without flinching, then she began to weaken.

Neuralgia never selected a more unsuitable and unfortunate time, for Mrs. Bowman was house-cleaning. Although there was a competent man at the helm, and two professional assistants, this brisk and particular housekeeper was always at the head of her troops. Her weapon on these occasions was an immaculate linen cloth and a hair-pin. Armed with these she tested the cleanliness of the visible and the invisible, for Mrs. Bowman was as anxious about the last as the first. When it is taken into consideration that there was not a square foot of woodwork from the fourth floor to the basement that was not gone over in this fashion, it is apparent that Mrs. Bowman was altogether too busy a woman to have neuralgia added to her programme. But it was there, and notwithstanding two or three surreptitious visits to a noted physician, had evidently come to stay. She couldn't dodge it or ignore it. The much-talked-of and highly recommended will power which had been her exclusive remedy for other

people's sufferings was not within call. Mr. Bowman wondered not a little at his wife's silence, and the stoniness of her expression, and more still at his unusual privileges; but this gentleman had purchased wisdom at usurers' rates through long experience, and his speculations were never interrogative. It was such a novel sensation, and such a comfort for Mr. Bowman's stitches to be allowed to drop without some sort of an interruption from his wife, that there is no sort of doubt but the poor man would have ravelled out with pleasure. On the fifth day Mrs. Bowman made her toilet as scrupulously as ever, and took her seat at the breakfast-table. Mr. Bowman was a little late. Whether or not he had been obliged to devote more time than usual to his knitting-work, or the falling off of military discipline was the cause of his tardiness, was not known. But when he did make his appearance, the deprecating apology which exhaled from the whole man was changed to a nervous chill, which would have been more exasperating to Mrs. Bowman than any number of dropped stitches. But she saw it not. The fact was, this lady had a job on her hands which required her undivided attention. Mrs. Bowman had always been distinguished for the dignity of her bearing. In fact, dignity was her strong point, and never since Mr. Bowman's acquaintance with her, had he known it to be compromised in the slightest degree. But now, with her head in her hands, her elbows on her knees, rocking to and fro to the rhythm of an indescribable torture, the poor victim of neuralgia groaned and wept. Mr. Bowman stood for a moment like a man stunned. Then, gathering courage from a prolonged and awful *crescendo*, he drew as near as seemed safe, and broke the rule of his life by asking his wife a question.

"Amanda," said he, timidly, "is anybody dead?" It never occurred to this gentleman that his wife might be ill. Certainly not. Had she not informed him fifty thousand times at least, that she had never been ill a day in her life, and wasn't that equivalent to saying she never would be? Mr. Bowman's confidence in the partner of his joys and woes—barring the stitches—was unlimited.

A suppressed shriek was the only answer Mr. Bowman received to his inquiry. He tried it again. "Tell me, Amanda," he pleaded, drawing a step nearer, "*is* anybody dead?"

"Did you ever know of a day when there *wasn't* somebody dead?" Mrs. Bowman at last responded, in a tone that caused her husband to back a little. "Perhaps *you* have," she went on, one hand clenched in her crimps, the other frantically extended, "but I never did."

"But there must be something terrible the matter," Mr. Bowman gently remarked.

"Did I say there wasn't?" Mrs. Bowman inquired, sobbing now as if her heart would break. "It's my head, if you want to—want to know! My head, I tell you, my head, my head! my head!"

"How did you hurt it?"

Mr. Bowman put on his glasses now, and tried to discover the cut or the bruise, or whatever it was. His wife had of course met with an accident. A step-ladder, a scrubbing-pail, or a box of soap might have fallen on her head. He couldn't think of anything else that would have been likely to cause the trouble, and Mr. Bowman had altogether too deep-seated an opinion of his wife's knowledge of herself, and consistency of character to suspect any internal disarrangement.

"Please, Amanda, tell me how you did it!" the husband entreated, bitterly remorseful that he had not risked the consequences, and warned his wife against the perils of house-cleaning. "Perhaps if you will tell me what it was that fell on you, and let me see just where the wound is, I can do something for you."

"I feel as if a red-hot iron was punching my left eye out, and somebody was driving a spike clear through my head!" And now another tornado of sobs put an end to the frantic communication.

"Just so, Amanda," said Mr. Bowman, with pathetic cheerfulness, "but how did you do it?"

"I didn't do it. I dunno' how I did it!" was the somewhat contradictory reply. "It's overwork, cold, worry, nerves, neuralgia!" the last word actually howled out. "*Now* do you know?"

Mr. Bowman didn't appear to know much of anything. If it hadn't been that his mouth and eyes seemed bent on finding out which could open the widest, there would have been no sign of life about him. Some men would have been less surprised to find out that their wives had run away from them, than Mr. Bowman was in the discovery of his wife's fallibility. That she could suffer like ordinary mortals was past belief, and yet here she was, so thoroughly taken possession of by the intolerable agony of a very common disorder, that she had not only parted with her dignity, but was even oblivious to his bad habits. One paroxysm of pain followed another, and finally Mr. Bowman gathered courage to remove his wife's clenched and almost rigid hands from her head, and substitute his own weak and trembling ones.

Never in all his attacks of stitch-dropping, and subsequent wear and tear, had his wife once stretched out a helping hand, but Mr. Bowman knew what pain was, and judging by what would have been grateful to him in his own moments of suffering, he pressed the throbbing head until the violence of the pain had abated. At this crisis Mr. Bowman was threatened with a stitch. So distressed and alarmed was he at the probable consequences of such an accident that he turned every imaginable color in his efforts to prevent it. But it was no use. The stitch broke away, as usual, and to apologize for the momentary weakness would only have made matters worse. So he recovered himself as hastily as he could and returned his hands to his wife's head.

"You feel a little better now, don't you?" the poor fellow inquired in the tone that one would use to a sick child.

"Yes!" Mrs. Bowman was so exhausted that she could only whisper. "I'm better," she went on, "but, Sylvester, how do you feel?"

Mr. Bowman was struck by lightning again.

"How do I feel?" he slowly repeated, as soon as he could muster his paralyzed forces. "Why, I feel pretty well, Amanda."

"Did that stitch hurt you *very* much?" Mrs. Bowman turned a pitiful face to her husband as she sobbed out this question.

"Dear one," was the distressed response, "don't give a thought to it. It did really seem unavoidable, but if I'd been a little more on my guard, perhaps—" another paroxysm seemed imminent, and Mr. Bowman resumed his novel occupation. It didn't seem at this juncture that there could be any more stitches for Mr. Bowman to drop, for the pain had left him pale and trembling, but he held firmly to his wife's bursting head, and sighed and groaned in sympathy with her agony, as he had never dared to for his own.

"That wasn't so bad as the last!" he remarked, encouragingly, as the rampant nerves quieted down again.

"No, not nearly," said his wife; "and your hands have made the difference. Tell me, Sylvester, have you ever suffered like this?"

"No, indeed," was the quick and unselfish reply. "It is very seldom that anybody suffers like this."

"But, Sylvester, your stitches?"

There was a gasping hiatus between Mrs. Bowman's words that would have been quite sufficient to bring the tears to her husband's eyes, but the influence of this new and totally unexpected sympathy almost floored the poor fellow.

"I never noticed till a little while ago how thin and pale you looked," Mrs. Bowman went on, "and I wish you would try and tell me how you feel."

Mr. Bowman choked back a sob, held on to a stitch, made his most grotesque faces, and then said softly:

"Amanda, I'd give a considerable if you would try and brace me up again with a little of your old courage, because, some way, I'm lost without it, and——"

"My old brutality, you mean," Mrs.

Bowman interrupted, with a heartbroken cry. "Come here!" and the miserable woman opened her arms, and took her husband's pale, contorted face to her bosom, and for a few moments there was not a word spoken, neuralgia and stitches having the floor pretty much to themselves.

"There's a purpose in pain, otherwise it were devilish," says the poet, and there was certainly a purpose in Mrs. Bowman's pain, for although Mr. Bowman had dropped too many stitches to be ever a whole man again, he was nursed and sympathized with in such a manner that the remaining ones were left intact on the needle.

ELEANOR KIRK.

BEAUTIFUL HOMES.

ART, wealth, labor, and exquisite taste are doing much continually to render American homes outwardly attractive. The artisan and florist vie with each other in decorations. Ceramics, bric-a-brac, works and books of old masters, and the voluminous effusions of those best known in literature and art of this age, adorn elegant and perfectly apportioned rooms. We find often in and about dwellings a luxurious air redolent with ease, and, inhaling it, involuntarily exclaim of such, "What a beautiful home!"

Perfection of situation and appointments are ever grateful to the outward eye, and satisfying to finer aspirations. All visions of loveliness are uplifting and purifying, while struggles with the demons of discord and uncleanliness, though they increase the measure of our mental and moral vitality, and are in our direct line of duty, debilitate our faith in humanity.

We delight in the elaborations of beautiful homes, the point lace and gold tassel of existence, when within their frescoed portals there are hearts which beat in harmony with their surroundings, and reflect on those with whom they come in contact the light of their own happy tempers. Then indeed is a home wholly and truly beautiful. But all beauty is not in grandeur. There is a greater wealth than money can give, and a beauty of character far exceeding that of exterior forms.

There are many beautiful homes, as sweet and simple as birds' nests set in wreaths of green leaves, that are perfumed with affection and adorned with the sunlight of smiling countenances, where the artificial gold-lace hangings and the parlor exotics are unknown.

God's patterns are wrought in various designs, and filled out with diverse and often entirely different grades of color. One creation absorbs the light, and another emits it. One scene is framed in diamonds and emeralds, and another in the petals of a wind-blown wild-flower. But if the works bear the impress of the Great Master they are alike fair. The truly beautiful are the truly good. A costly frame can not change the artist's or connoisseur's estimate of a picture. Human pictures construct in a manner their own surroundings. Beautiful lives make beautiful homes. Beautiful lives are the result of a tender, earnest, and loving practical desire to make those about us happy, to purify and brighten the atmosphere.

Beauty is not an abstract element. It is an individual, spiritual presence, a vision, a breath, a touch, or a sound that appeals to our higher natures — an indescribable something that reaches us through the organs of sight, but which we fully recognize by far keener faculties. Nothing lacking harmony can be beautiful. Mental and physical frowns cloud often the skies of human pictures. Flaws of careless, impure habits and uncurbed temper render imperfect lives with outwardly attractive surroundings, while smile-wreathed lips that drop words perfumed with the generous kindness of a well-directed and discerning mind, are the beautiful harmonizers, the gate-keep-

ers of faith, the ministers of peace, whispering of the lost Eden and prospective Heaven. The equalizers of discordant elements are the key-notes of beautiful homes. We make or mar beauty as we move. We can not be wholly neutral in our influence, though we may be mental nonentities.

The idea that evil customs are past redemption, and that good words may be wisely withheld, lest they be lost in the Babel of bad, is false. By the silent endurance of wrongs we augment them, when by placing truth and purity unobtrusively in contrast, we would be bearing true witness to our principles, and lending our efforts to the increase of beautiful homes. MRS. S. L. OBERHOLTZER.

THE ADVICE HE NEEDED, AND GOT.

"OH, yes; I understand all that," said a father to his son, who was mourning and grieving over the lack of true womanhood among the girls of his acquaintance. "Mere butterflies of fashion, you say, who can rattle the keys of a grand piano, dance like fairies, chatter nonsense and society nothings by the hour, but for their lives can not bake a loaf of bread, roast a turkey, do a day's washing, or make a shirt. You say you demand the noblest type of true womanhood in your wife, and you want to know where you can find the wife you want? Well, I will tell you, my dear boy. If that is the sort of a woman you want, marry Norah Mulligan, your laundress' daughter. She wears cowhide shoes, is guiltless of corsets, never had a sick day in her life, takes in washing, goes out house-cleaning, and cooks for a family of seven children, her mother, and three section men who board with her. I don't think she would marry you, because Con Regan, the track-walker, is her style of man. She is the useful sort of a woman you appear to want; but I don't think she would look at you twice. Let me examine into your qualifications as a model husband after your own matrimonial ideas, my boy. Can you shoulder a barrel of flour, and carry it down to the cellar? My dear boy, a quarter of a sack of meal would get away with those chalky fingers and slender arms of yours. Can you saw and split ten cords of hickory wood in the fall, so as to have fuel ready in the winter? Telemachus, those twenty-three inches of coat padded over sixteen inches of shoulders wouldn't help you a cent's worth. Do you know, my son—look me in the eye—do you know how to measure ten cords of wood after the man has piled it in five irregular heaps, and tells you it is all there? Do you know how to buy potatoes, and how to put them away for winter? Do you know how to pick over the apples after Christmas? Do you know how to watch the shoeing of your own horse—if you drive one—and can you tell timothy from prairie hay when you are buying it? Can you spade up half an acre of ground for a kitchen-garden? Do you know what will take the limy taste out of the new cistern, and can you patch the little leak in the kitchen roof?

"What would you do if a hoop fell off the flour barrel? Suppose the chimney gets choked up, or the front door binds at the top? What if a mortise lock gets out of order? If an extra shelf is wanted in the pantry? Or two or three little houses for the hens with little broods of chicks? Can you bring home a pane of glass and a wad of putty, and repair damages in the kitchen window? Can you hang some cheap paper on the kitchen? Can you fix the front gate so that it will not sag? Can you help the man to carry the kitchen stove out to the summer kitchen? Do you know how to fix a pump when it chokes? Can you make two or three tree boxes for the trees you planted on the sidewalk, if you knew how to plant them? Can you do anything

about the house that Con Regan can? My dear boy, you see why Nora Mulligan will have none of you—she wants a higher type of true manhood. You expect to hire men to do all the man's work about the house, but you want your wife to do everything that any woman can do. Believe me, my son, nine-tenths of the girls who play the piano and sing so charmingly, whom you, in your limited knowledge, set down as 'mere butterflies of fashion,' are better fitted for wives than you are for a husband. The girls know more about these things than you do. If you want to marry a first-class cook and experienced housekeeper, do your courting in the intelligence office. But if you want a wife, marry the girl you love, with dimpled hands and a face like the sunlight, and her love will teach her all these things, my boy, long before you have learned one-half of your own lesson."—*Western Paper.*

A BOSTON GIRL TURNED INDIAN.—A paragraph published awhile ago in the *Journal* of Sioux City stated that for seven months there had been living with the Omahas an educated young lady from Boston who for the time was a member of the tribe, because she hoped in this way to learn something of the inner life of this the oldest tribe, excepting the Pawnees, in that part of the West. Miss Fletcher is a brunette, solidly built, about twenty-five years old, rather good-looking, and with a directness of speech and a way of standing silent while irrelevant conversation is going on that probably was learned in her Indian life. Miss Fletcher intimated to Dr. Wilkinson, the Indian agent, that before going to the Omahas she had been with some of the warlike northern tribes, and that she intended to go to the New Mexico Pueblos, thence to the Flatheads of Washington Territory, and return East by way of the Sioux country. Mr. Cushing, of the Zunis, must look out for his laurels.

At the late meeting of the Science Association at Montreal, Miss Fletcher was present, and her relations of some of her Indian experiences were among the most interesting features of the proceedings.

PSYCHIC COMMUNION.

LATE upon an evening lonely,
With my soul, dear Psyche, only,
I walked out amid the glory
Of the world so old and hoary.

Then in meditation deep,
As one talking in his sleep,
I there asked my soul the question,
Full of troublesome suggestion:
"Wherefore man and wherefore nature?
Earth and air and living creature?
Where are life's mysterious sources?
Where are lodged the mighty forces
Which to universe give fashion
All its beauty, all its motion?"

Then this faithful mentor, seeing
All the unrest of my being,
Kindly bent her head and listened,
And her fair brow brightly glistened
Like Aurora's ruddy features,
Angel smiles to cheer earth's creatures,
Gently whispering, as she said:
'All are one in the living Head.
Every attribute of soul
Is an atom of the Whole.
Every soul is but a part
Of the Universal Heart,
Suns and stars and flying comets
All unite in singing sonnets.
All things high and low we see,
From rolling world to flower and tree,
From surging sea to mole and sod,
Concenter in the living God.
His mercy fills the mountain air,
And sunbeams come to answer prayer.
The day with silver wings of light
Dispels the gloomy shades of night;
The soil its richest treasure yields
And fills with grain the gracious fields;
The gentle rains in goodness fall
And bring their blessings free to all."

Dare I heed my teacher's teaching?
Dare accept my prophet's preaching?
I do accept, the truth is plain,
My faith beholds the endless chain,
The perfect way, the holy Power
That consecrates my soul this hour—
An oracle divinely wise,
With message given from the skies,
That universal law benign
Stamps all existency divine.

C. C. COLLINS.

THE POLLUTION AND PURIFICATION OF OUR RIVERS AND HARBORS.

POLLUTION.

WHEN we look back into the past, it at first seems strange that there should have been so much opposition to new ideas; that for a man to attempt to introduce some improvement or to advance some new thought was for him to put his comfort, and even his life, in jeopardy. But when we look about us in this nineteenth century, we see how difficult it is even now to introduce a new idea—how difficult even to introduce an idea that affects the health of a community—how difficult it is to get people out of old, injurious ways, and to accept something new and better. All that is new, however, is not good. The mere property of being *new* is not sufficient: newness by itself is a very doubtful element. Every day we see about us things that prove this. With the *new* we want the *better* combined. When we look back on the past we see the struggle between the good and the evil; we see that our brethren in the past struggled for the advancement of society even as we to-day are struggling for the same idea—their labors in this line have inspired us. Their zeal in behalf of the betterment of the world appealed to our intellects and prompted us to commence where they left off. The past had its faults as well as the present, but then many of its faults were the results of the darkness of the age. The age must wait for more light.

When we advance intellectually so that we are able to see ourselves as the future will see us, it makes us more charitable toward the past; not that we indorse all the backward spirit of the past, but we are able to see that, with all our superior surroundings, we are relatively no better in this respect than were people centuries ago. Many false steps are taken, and it would seem that it was necessary, at least obligatory, that it should be so. Then many steps are only an advancement in the immediate present, they are not permanent; they are like the temporary work of the engineer—such as scaffolding, arches, sluiceways, and even roads—good at their time, an advancement in the immediate present, but only in the way, and even a nuisance, when the grand conceptions of the engineer are being advanced to completion. There are many things that are an advancement in their day, but because they are such it is no reason that we should ever hold to them, and say that the world should not advance beyond them. We had the old oil-lamp and candles—these have been superseded by gas. But who will say that the world shall not go beyond gas, and advance to something better? The old vault system was well enough in its day, and even now, in country places, where people are not too much crowded together, it is still an advantageous institution. But in the crowded city it has been su-

perseded by the water-closet. When the country was new, and we were anxious to carry out some mechanical scheme, to manufacture implements and raiment necessary for our comfort and existence here, we thought it no harm to let our waste material pass into our rivers and harbors. It was an easy way of getting rid of waste material. The works were on such a small scale, and the waters were so pure and abundant, that it did not seem possible that such a small amount of impurity from our water-closets and our workshops would seriously affect them. For years it did not, but now the years have made such a change that we are forced to look about us for some new and better method — some method whereby the works and conveniences demanded by civilized communities may continue, but may not become more of a curse than a blessing. At present they are rapidly approaching the abyss of a curse.

Probably there is nothing outside of the adulteration of food which bids so fair to affect the health of communities as the pollution of our streams. The world certainly can not complain that no one has thought of this, or that their attention has not been called to it. The leading medical and sanitary journals, and even the more popular magazines and daily papers, now for a number of years, in most strong terms, have called attention to this fact. They have shown that this pollution is on the increase, and that if unchecked, it must and will produce frightful results, and that it is something which has no respect for persons.

We introduce water into a city; it certainly is a good thing, yet with all its blessing it has introduced one great curse, and probably more than any other one thing is helping to fill our streams and harbors with an accumulation of filth that is already obnoxious, and which bids fair to react upon us in a most terrible manner. If this could not be helped, we might abide by it and resign ourselves to our fate, but with all our scientific and practical knowledge and ingenuity it does seem as though we were simply inviting a calamity, perhaps praying that it will not come, yet indifferent to ways and means to prevent it when it is within our power to do so.

When we introduced the water-closet, and then through the public water-works increased this institution a hundred-fold, we thought we were doing a nice thing. Yet in a moment of time we are getting rid of the most obnoxious part of our sewage by the ounce, from our immediate surroundings, and storing it up in our streams and harbors by the ton! And the same with all the obnoxious wastes from our factories. The daily amount that we so easily transport from our immediate presence is very small, but the amount that accumulates in the beds of our streams is immense. Being all out of sight—covered by water—it is thought to be quite harmless there. But it is not, and the greater the increase the more obnoxious and dangerous it becomes, and unless steps are taken to rectify this, the day will come when we will curse the introduction of the system that put it upon us. With all our intelligence it would seem that we could change all this, even in less time than it took to introduce it, and that the "earth-closet" system, properly applied and regulated, should be the medium whereby it would be accomplished. This would leave our sewers free to the ordinary waste waters from the kitchen, washings, etc., and even these waters, by some simple process of filtering, might readily be purified from their injurious properties before entering our rivers.

When a man builds a house, in place of the present water-closet, which must connect with the public sewer, that even traps will not wholly protect him from, let him construct a flue or ventilating shaft near a chimney, from the ground to well above the roof, with openings on the several stories to this shaft. At the bottom of this shaft, out-doors, have a pit or bin where earth can be kept, which shall act on the principle of the earth-closet. The coal and wood ashes that accumulate about the house will, I think, answer well the purpose as a substitute for earth.

And if this idea shall work we shall neutralize two evils or nuisances—combine them into one virtue—a virtue that may even have a market value. Some such arrangement as this will undoubtedly work well and accomplish the desired result. There is no deception in this plan; it will not put us under the delusion that we are getting rid of some obnoxious thing, when we are only transporting it and storing it up a short distance from us, where it will in due time react upon us, poison our surroundings, make us regret our shortsightedness when it is too late, and put us to the expense of millions to right the evil, when hundreds, combined with good common sense, would have prevented it in the beginning. A continuance of the present system will most surely be expensive to us and produce most terrible results. If we are wise, now while it is yet time, we will protect ourselves. Delay in this matter will prove most expensive and dangerous.

PURIFICATION.

It is said that when Milton wrote his "Paradise Lost," an old Quaker suggested to him to write "Paradise Regained." "Paradise Lost" is quite as well known as Bunyan's "Pilgrim's Progress," but who ever hears of the "Paradise Regained"? The large libraries, of course, have it, and well-to-do people, with special pride or culture, may have it, but the great world outside knows little or nothing about this later work of the poet. Perhaps Mr. Milton did not have as much interest in this branch of his subject, but herein I have no desire or space to open a literary discussion. But the reader may ask, what have these works of Milton to do with our subject? Probably not much, yet there is a connecting idea which well illustrates the common bent of the human mind. Many people in the world are all the while complaining or moaning over something "lost," who never seem to have the high common sense of this old Quaker, and ask why it can not be "regained." What is the use of settling down into a morbid condition, and being ever satisfied with bewailing some calamity or wrong, or the presence of injurious surroundings? No use at all. Unless we can do more than this we had better rest satisfied, and let the evils grow and grow until they completely overwhelm us. Too often the world stops at the mere recital of some wrong or evil—this seems to satisfy its morbid sensibility. Fortunately for us, however, there are a few "old Quakers" in the world. When the poet writes most eloquently about "Paradise Lost," he, with his practical sense, wants to know if the poet can not also write about "Paradise Regained." When the morbid sense of the world writes and talks about the impurity of our water-courses, and of all the evils that must result therefrom, the practical mind looks about him and sees the wonderful ingenuity of his fellow-men, and he asks, can not some of this ingenuity be directed toward improving the sanitary conditions of our surroundings? Can not something be devised whereby the purity of our water-courses may be regained? Hundreds of things, even more difficult than this, have been accomplished by the ingenuity of man. If the ingenuity of man was half as much exercised in benefiting mankind as in producing that which is injurious, we would see far more comfort and happiness about us than at present. During the winter filth accumulates; it is not then obnoxious or injurious, and even in the summer, filth, in small proportions, may not be practically injurious, but when filth accumulates the atmosphere of the warmer seasons adds to its properties, or generates new chemical combinations, which breed disease and even death. When the warm weather comes the nuisance and poisonous attributes of these store-houses of filth are more apparent. Their being covered with water, and thereby not at once revealed to the eye, does not make them harmless; they are full as dangerous as though uncovered by any veil, and even more so, for the continued presence of water only adds harmful properties to them, whereas if there were no water

present the powerful heat of the sun would soon disintegrate them, and so change their chemical combinations as to take from them the properties most unpleasant and injurious.

When the warm weather comes and we go down to the water, where the filth from thousands of households is being continually deposited, the tide is low, and some steamboat comes along and stirs up the black, filthy water, and we get a good inhalation of the gases that ascend and poison the air. Let us say to ourselves: "We not only permit this, but, worse, we are all the while contributing our share toward the pollution of our fair streams." Nature gave them to us pure and fair to look upon, and made them a blessing to us in many ways, and, instead of endeavoring to retain them in purity, whereby we may reap the most blessing from them, we, in our indifference, present selfishness, and willful ignorance, are allowing the same every day to become more and more a nuisance and a curse.

The ancient Hindoos had their holy rivers; the practical sense of the present day would not permit us to worship rivers, or in any theological sense to regard them as holy, yet it would seem that it was about time that we realized, in its broadest sense, that "cleanliness was godliness"—that one of the first steps toward attaining this would be to have more regard for the purity of our rivers, and in this sense regard them as "holy"—have them so pure that we may not be defiled by them. It is about time our veneration extended to these practical things whereby the human race is advanced and made happy.

In this all must work. All must receive the blessing or the curse—there is no respect for persons. The rich and powerful can not escape by any "Wall-street" method; nor can the poor and less influential escape by any medical process. We are all in one boat together, and together we must be wrecked or sail proudly on. While we sail along let us no longer encourage the idea that filthy water full of poisonous matter is just as good to sail on and to live by as that which is clear and uncontaminated. Let us, one and all, do all in our power to discourage and rebuke this idea, and to encourage the world to regain the purity of the waters on which we sail, and the purity of the streams that flow past our habitations. Ignorance, neglect, and the want of the proper development of our latent ingenuity has caused many of our best streams and harbors to become mere sinks for the accumulations of the most foul and repulsive matter. We have it in our power to regain them, to restore them quite to their natural purity. If we are wise, we shall concentrate our ingenuity more in this direction. The curse and the blessing are extended to us. We have the power; therefore, let us have the wisdom to turn the curse from us and to foster the blessing. What we have "lost" we can easily "regain," if we only will.

ISAAC P. NOYES.

WASHINGTON, D. C.

OCCUPATION AND LONGEVITY.—"Woe to them that are at ease!" says Carlyle, but his anathema does not prevent the English village parson from outliving every other class of his countrymen, not excepting the British farmer, whose peace of mind can not always be reconciled with high rents and the low price of American wheat. Where agriculture is what it should be—a contract between man and Nature, in the United States, in Australia, and in some parts of Switzerland—the plow-furrow is the straightest road to longevity; in Canada, where Nature is rather a hard taskmaster, the probabilities are in favor of such half-indoor trades as carpentering and certain branches of horticulture—summer farming, as the Germans call it. Cold is an antiseptic, and the best febrifuge, but by no means a panacea, and the warmest climate on earth is out and out preferable even to the border-lands of the polar zone. The average Arab outlives the average Esquimau by twenty-five years.

The hygienic benefit of sea-voyages, too, has been amazingly exaggerated.

Seafaring is not conducive to longevity; the advantage of the exercise in the rigging is more than outweighed by the effluvia of the cockpit, by the pickle-diet, the unnatural motion, and the foul-weather misery; and, from a sanitary stand-point, the sea-air itself is hardly preferable to mountain and woodland air. The eozoön may have been a marine product, but our Pliocene ancestor was probably a forest creature.

"For what length of time would you undertake to warrant the health of a seaman?" Varnhagen asked a Dutch marine doctor. "That depends on the length of his furlough," replied the frank Hollander, and it will require centuries of reform to redeem our cities from the odium of a similar reproach. In victuals and vitality towns consume the hoarded stores of the country, and only the garden-suburbs of a few North American cities are hygienically self-supporting. Permanent in-door work is slow suicide, and between the various shop-trades and sedentary occupations the difference in this respect is only one of degree. Factories stand at the bottom of the scale, and the dust and vapor generating ones below zero; the weaver's chances to reach the average age of his species have to be expressed by a negative quantity. In France, where the tabulation of comparative statistics is carried further than anywhere else, the healthfulness of the principal town trades has been ascertained to decrease in the following order: House-building, huckstering, hot-bed gardening (florists), carpenter and brick-mason trades, street-paving, street-cleaning, sewer-cleaning, blacksmiths, artisan-smiths (silver, copper, and tin concerns), shoemaking, paper-making, glass-blowing, tailor, butcher, house-painter, baker, cook, stone-masons and lapidaries, operatives of paint and lead factories, weavers, steel-grinders—the wide difference between brick and stone-masons being due to the lung-infesting dust of lapidary work, which, though an out-door occupation, is nearly as unhealthy as steel-grinding. Lead-paint makers have to alternate their work with jobs in the tin-shop, and, after all, can rarely stand it for more than fifteen years; needle-grinders generally succumb after twelve or fourteen years. — *Popular Science Monthly for September.*

"COMPOUND OXYGEN."

THERE has been no small amount of advertising and talk in the newspapers for a long time past with regard to "Compound Oxygen." Wonderful cures are said to have been wrought by its administration, and wonderful hopes have been held out to the sick, if they would only try it, at the rate of ten to twenty dollars a quart.

Professor Prescott, of the University of Michigan, has been analyzing several "brands" of the thing, and the following are the results, as published in the *Physician and Surgeon:*

1. "COMPOUND OXYGEN. *Keep Dark.*"—A colorless aqueous solution of nitrate of ammonium and nitrate of lead, the two salts being in nearly equal proportions, and together forming about three per cent. of the solution.

2. "OXYGEN AQUÆ. *For Digestion. Keep Cool.*"—One of the grades of "compound oxygen": A colorless, odorless, and tasteless liquid—found to be water, of a commendable degree of purity, quite free from sophistications. Probably this is the original compound oxygen.

3. "COMPOUND OXYGEN." *Dr. Green's,* 1880. An aqueous solution of nitrate of ammonium, with a very little nitrate of lead.

4. "COMPOUND OXYGEN." *A White Crystalline Solid.*—Obtained for analysis about five years ago, and then found to be nitrate of ammonium alone. "Contains all the vitalizing elements of the atmosphere, but combined in a different way."

5. "COMPOUND OXYGEN."—Sent out from Boston. A colored, fragrant liquid, consisting of alcohol, chloroform, and balsam of tolu.

6. "COMPOUND OXYGEN." *Dr. O'Leary.*—Contains alcohol, chloroform, bitter almond oil, balsam of tolu, and red coloring matter.

The first two samples, "Compound Oxygen" and "Oxygen Aquæ," were sent to Professor Prescott for analysis by the editor of *Good Health*, who remarks as follows:

"It should be recollected that this solution is to be used by inhalation, a teaspoonful being added to a small quantity of warm water, through which air is drawn by means of a glass tube. Neither of the substances contained in the solution are volatile at the temperature at which the solution is used, so that it is impossible for any medicinal property whatever to be imparted by this boasted remedy, except what comes from the warm water, which is itself very healing when used in this way, as we have demonstrated in hundreds of cases. Professor Prescott also tested the vapor given off from the pure solution when it was boiled, but found nothing more than the vapor of water.

"The 'Compound Oxygen' is usually accompanied by what the manufacturers are pleased to call 'Oxygen Aquæ,' which they recommend their patients to take as an aid to digestion. The analysis of this showed it to contain nothing but water. The most careful tests revealed nothing else."

THREE GOOD DOCTORS.

THE best of all the pill-box crew
Since ever time began,
Are the doctors who have most to do
With the health of a hearty man.

And so I count them up again,
And praise them as I can;
There's Dr. Diet, and Dr. Quiet,
And Dr. Merryman.

There's Dr. Diet, he tries my tongue,
"I know you well," says he;
"Your stomach is poor, and your liver is sprung;
We must make your food agree."

And Dr. Quiet, he feels my wrist,
And he gravely shakes his head.
"Now, now, dear sir, I must insist
That you go at ten to bed."

But Dr. Merryman for me
Of all the pill-box crew!
For he smiles and says, as he fobs his fee,
"Laugh on, whatever you do!"

So now I eat what I ought to eat,
And at ten I go to bed,
And I laugh in the face of cold or heat;
For thus have the doctors said!

And so I count them up again,
And praise them as I can;
There's Dr. Diet, and Dr. Quiet,
And Dr. Merryman.

S. W. DUFFIELD, D.D., in *Independent*.

HEALTH THE BEST WEALTH.

NOTHING discourages the earnest health-reformer like the quiet satisfaction with which the majority of people live without health. If a woman can eat and sleep, and is able to attend to the ordinary duties of life without pain, she is not only satisfied, but grateful for such a merciful dispensation.

Let people be satisfied with such poverty in other departments of life; let a man be satisfied with just enough to buy food for the hour; we cry out "Shiftless, good-for-nothing," and yet how contemptible is money by the side of health! A man who lives in the midst of the new continent is rich, if he possesses health. No matter what may be his surroundings, though he be a millionaire or wear a crown, he is poor indeed, if he be sick. I want to see a noble ambition to grow

rich in this true wealth. I want to see men and women very misers of physical vigor.

Look at those two men. They are the ordinary pale, round-shouldered Americans. To-day they have nothing but their naked hands and brave hearts. They engage in the struggle for success. One gives up body and soul to making money, the other, a generous part of his life to laying up this inestimable wealth of health. Ten years elapse; now we look at them again.

The greedy merchant counts his gold by the million; but he is twenty years older than when we saw him first. He is thinner and paler, he is dyspeptic, nervous, anxious, old, thoroughly unhappy. That man has made a wretched failure in life. Every large heart sincerely pities him.

Now we look at the other. Erect, broad-chested, muscular, vigorous, healthy, happy, buoyant, victorious. We will not trouble ourselves to ask how much money he has collected. We can not look upon him without feeling that he has achieved a grand triumph.

I wish I felt at liberty to mention a few Boston names. It would strikingly illustrate the point under discussion. I could mention the name of a gentleman who resides on the hill near my own home, who has amassed an immense fortune. His carriage is the finest in the neighborhood, and I notice in many unusual ways the most lavish waste of money. But I never see that gentleman without pitying him from the bottom of my heart. His face is the picture of despair. Nervous and dyspeptic, life is all a torture to him. I should not be surprised to hear of his committing suicide. Half the rich men and women in town belong to the category of the miserable. They can't digest their dinners.

DR. DIO LEWIS.

A PHYSICIAN'S EXPERIENCE IN SMOKING. — A French physician, Dr. Deschamps, thus describes his experience as a smoker in *Galignani's Messenger*:

"My *debut* as a smoker was like everybody's. My first pipe made me very ill, and it was only by degrees that I managed to become a third-rate smoker—that is, I disposed of eight or ten pipes a day without inconvenience, but whenever I exceeded that average I suffered from violent sick headaches, ushered in by indistinctness of vision, and numbness of one side of the face, the tongue, and one arm, most often on the left side. These preliminary symptoms lasted about ten minutes, after which the headache came on in full force. The most refractory organ, however, was my stomach. After having smoked too much, I used to experience the symptom known as pyrosis or heartburn to a very trying extent, though as any alkaline water speedily caused these phenomena to vanish, I did not care to give up my tobacco.

"About a year ago, having smoked for some months more than usual, I suddenly found myself affected by a peculiar and terrific pain over the region of the heart; in short, I had a violent attack of angina pectoris. It put a stop to my smoking, as, though I have since tried once or twice, I have always found my cigar or pipe detestable, and, to sum up, am radically converted. I do not wish to discuss scientifically the nicotinic origin of my sufferings, but am sure that they all sprang from the same cause—excessive use of tobacco. Degeneration of the cardiac muscle is often caused by tobacco. So long as the rest of his organism remains in good working order, the smoker only experiences intermittent palpitation, and the grave injury done the heart remains unperceived until some trifling cause brings into relief the irremediable disorders produced by the prolonged use of tobacco."

FASTING AS A REMEDY FOR INSANITY. —Henry Clark, an inmate of the Camden County, N. J., Insane Asylum, recently completed a forty-one days' fast, which he undertook in the hope that it might restore his mental faculties to their nor-

mal condition, and that result is likely to follow, in the opinion of the asylum attendants. The man was watched day and night, and every effort was made, short of violence, to induce him to eat, but the evidence is pretty conclusive that for forty-one days nothing went into his mouth except air and water, and only six quarts of the latter. His condition varied considerably at different periods of the fast. On the forty-second day he asked for and drank a cup of coffee, and thereafter for a fortnight he lived upon a simple vegetable diet, consisting principally of strawberries and milk. It is confidently expected that he will be discharged as a cured patient within a short time.

Just what share the fast has had in his recovery it is of course impossible to say, but the fact is nevertheless true, that a large proportion of the cases of insanity is due to diseased conditions of the alimentary function.

KITCHEN LEAFLETS, No. 10.

ESSENTIALS OF GOOD COOKERY—STEWED GREEN CORN—SUCCOTASH—FRUIT SAUCE—GRAPE JELLY—QUINCE MARMALADE, ETC.

WHILE great stress is properly laid on the necessity of having good materials to eat if one would enjoy good health, we should not forget that a very important part is performed by the cook toward rendering food digestible and nutritious. We hear complaints on all sides about the difficulty of procuring first-rate meal, flour, beef, vegetables, fruit, and so on; we are told that so much is paid for this and that, and the grocer pretends to send the *best*, but the flour won't make good, sweet bread; the steak and chop are tough and leathery; the potatoes soggy, and the pudding, instead of being a delightful addition or *finale* to the dinner, is a too hard or too soft mass of insipid substance. We know that there is an extraordinary amount of adulteration done by manufacturers and dealers in food materials, but it mainly affects the chemicals and spices and condiments used by the majority of people. I am not sure that the adulterating materials are not less injurious essentially than the soda, cream of tartar, pepper, mustard, ginger, mace, alcohol, vinegar, etc., which are supposed to constitute the essential factors of baking-powder, flavors, and condiments. There is too much competition in trade nowadays for manufacturers and merchants to trifle with the quality of staple food products; and in our large cities grain, flour, and meal are subject to a systematic inspection which determines quality and price. Living in a community by no means renowned for its conveniences, I could say a word about the difficulty of procuring household supplies, but I have found that by exercising care and a little patience the *necessary* food materials, at least, can be obtained, of good quality. Hence, when I hear people complaining of heavy bread, sodden biscuits, unsavory porridge, etc., I can not help attributing the fault to the cook and not to the articles which the grocer sent home. There are a few housekeepers I know, whose slender means compel them to live very economically, who always have splendid bread and cake, and they do not buy "gilt-edged" flour either.

Perhaps a score of my acquaintances have tried to make graham gems, but half of them have failed or given up the endeavor. One, a most worthy lady, so far as my society knowledge of her goes, has obtained advice repeatedly on the method of preparing and baking the gems, but failed every time she attempted to make them. Yet to one who knows how, it is an easy matter, much easier than the long and varied process of making leavened bread. In some hygienic cures gems are made daily of wheat or oatmeal, or corn-meal, and hundreds at a time, and they come on

the table warm, aromatic, light as a sponge, and delightfully toothsome. I have sat at the table of a well-to-do family where the linen, china, glass, cutlery, etc., were unexceptionable, but the food intolerable, even such an article as oatmeal porridge being brought on the table in such a half-cooked, half-burned state as to nauseate a stomach accustomed to the appetizing product of a double boiler. Porridges of oatmeal, crushed wheat, barley, or hominy, are among the simplest dishes one can prepare, but perfection in them requires that the cook shall know something of the nature of the grains and their "behavior," as the chemists say, in contact with water. I know some people who serve oatmeal at the breakfast-table, after boiling it less than an hour; certainly were it not for the disguise which heat, milk, and sugar throw over the raw mess, they could not swallow it. Yet I believe that people who can eat rare (raw) beefsteak, with its coagulum of albumen which the frying-pan has rendered insoluble, can tutor their palates into accepting any food in association with the mustard-pot and sauce-bottle.

I heard a while ago that the chief cook in a certain Boston hotel received a larger salary than a Cabinet minister, and that first-class cooks in our better restaurants were in much better financial condition than the average professional man. I don't wonder at this, for people who know the difference between well-cooked food and spoiled food materials will, if they can afford it, pay for the service of a skillful cook. Hotel and restaurant men know that it pays to keep a first-class man in the kitchen. Science, art, experience, are just as necessary to be a good cook, as they are indispensable factors to the artist who would secure a high reputation. A plantation "mammy" will turn out a delicious corn-cake from her primitive skillet set over the live embers of a wood fire, while a cultured New England housekeeper would probably fail several times in her first endeavors to produce a like result. Mammy knows how to do it, *i.e.*, she knows the kind of corn-meal that will make good cake, the degree of heat necessary, and the way in which water should be mingled with the meal. She has "dar sperence" about the baking; how the cake looks under the operation, and when it's "just gone done." It seems to me that it is time society fully understood the fact that it is no small matter to be a good cook; the endless train of stomachic ills people are suffering on account of their daily exposure to spoiled stuff from the kitchen should awaken them to an appreciation of the necessity of knowing what is good for them. Every man and every woman of mature years should be enough of a physiologist to judge what is suitable for the needs of the body, and could I have the ordering of the curriculum in our public schools, I should place high on the list practical instruction in dietetic physiology.

STEWED GREEN CORN.

Cut the grain from the cob, and stew fifteen minutes in boiling water; then pour off most of the water, cover with cold milk, and stew until very tender. Salt moderately, to replace the loss by water.

GREEN CORN FRITTERS.

Grate the corn from the cob, and allow two eggs to one pint of the corn, two tablespoonfuls of milk or cream. Beat the eggs well, add the corn by degrees, beating hard, then the cream or milk; thicken with just flour enough to hold the ingredients together—about one tablespoonful to two eggs is sufficient. Cook on an oiled griddle, like batter-cakes.

SUCCOTASH.

This Indian dish, as its name indicates, is usually made of green corn and Lima beans, although green string or butter beans may be used. Have a third more corn than beans. After the former has been cut from the cob and the beans prepared, put the beans into boiling water, enough to cover them, no more, and cook one hour before adding the corn; then proceed as for stewed corn. Lastly, thicken with one teaspoonful of cornstarch, dissolved in a little cold milk. Boil up once and pour in a deep vegetable-dish.

RICE CAKES.

1 cup of cold boiled rice.
1 pint of flour.

1 teaspoonful of salt.
2 eggs, beaten light.
1½ pints of milk.

Beat all together well, and bake on a hot griddle in muffin-rings, or in any form which is agreeable to the taste.

BAKED TOMATOES.—ANOTHER RECIPE.

In the last number of the PHRENOLOGICAL, several recipes were given for tomatoes. As the season for this excellent fruit in its freshness direct from the garden is not quite over, I add another, and equally simple, way of treating them, by some considered the nicest: Cut the tomatoes, plump and ripe ones, in halves, and lay them in a baking dish; cover with a layer of bread crumbs, a pinch of salt, and some well-chopped parsley, and bake in a quick oven.

FRUIT MUFFINS.

Mix equal parts of well-cooked rice, Graham flour B, oatmeal and water, and bake in muffin-rings for twenty minutes, or until the cakes will slip from the rings without sticking. Then, while hot, split in halves, and on one place ripe fruit, lightly sprinkled with sugar; immediately place over it the other half. When all are thus fruited, cover and set in a warm place for ten minutes, and serve.

MIXED FRUIT SAUCE.

One part quince, two parts pears, three parts apples—all pared, cored, and quartered. Stew the quinces and pears in a porcelain-lined kettle until tender, then add the apples; sweeten and mix well together. Serve cold. If the apples are sweet, less sugar will be necessary. If well cooked, this sauce will keep in good condition several weeks, but only in a close jar or pot, and in a cool pantry.

GRAPE PUDDING SAUCE.

Stew Concord or Isabella grapes with enough water to cover them fifteen minutes, then rub them through a colander; thicken slightly with cornstarch or sifted Graham flour, and sweeten according to the acidity of the grapes.

GRAPE JELLY.

Boil the grapes until soft, then rub them through a flour-sieve with a wooden spoon twice. Boil the juice and pulp twenty minutes; add *hot* sugar in the proportion of three-quarters of a pound to a pint of the juice; now boil five minutes, and immediately remove from the fire and pour into jelly-glasses which have been standing in hot water. Cranberry jelly can be made in a similar manner.

JAM.—Some prefer grape jam to jelly made of the fruit of the vine. Take well-ripened grapes for jam and stew them until soft. Strain out the seeds and skins, and to each quart of the pulp add one pint of white sugar. Boil one hour, stirring it to keep from burning. Seal up in glass jars or cans. The process for jam is, if anything, easier than for jelly, but care is required for a thoroughly satisfactory result.

QUINCE MARMALADE.

Pare the fruit, removing all blemishes, and put it on to cook in a porcelain kettle, with water enough to cover them. When they boil up, add three-quarters of a pound of sugar to a pound of quinces. Cook until the fruit assumes a smooth mass, stirring frequently with a wooden spoon, turning the quinces up from the bottom to prevent burning. Pour into stone jars when done, and cover and tie up closely when cold. Set away in a cool, dry place.

BAKED QUINCES make an excellent side-dish. They are prepared in the simple manner of apples—the core being scooped out and the opening filled with sugar. Considerable time is required to bake them properly, as they must be kept in the oven until thoroughly tender.

MIRA EATON.

MORAL EFFECT OF TEA, COFFEE, ETC.—That eminent German physician, Dr. Bock, whose opinions are so often quoted in sanitary channels, writes with reference to the moral influence of the favorite beverages of society in the following terms:

"The nervousness and peevishness of our times are chiefly attributable to tea and coffee; the digestive organs of confirmed coffee-drinkers are in a state of chronic derangement, which reacts on the brain, producing fretful and crying moods. Fine ladies addicted to strong coffee have a characteristic temper, which I might describe as a mania for acting the persecuted saint. The snappish, petulant humor of the Chinese can certainly be ascribed to their immoderate fondness for tea. Beer is brutalizing, wine impassions, whisky infuriates, but eventually unmans. The alcoholic drinks, combined with a flesh and fat diet, totally subjugate the moral man, unless their influence be counteracted by violent exercise; but with sedentary habits they produce those unhappy flesh sponges, which may be studied in metropolitan bachelor halls, but better yet in wealthy convents. The soul that may still linger in a fat Austrian abbot is functional to his body only as salt is to pork—in preventing imminent putrefaction."

NOTES IN SCIENCE AND AGRICULTURE.

A New Race of People in Russia.—In the *Revue Scientifique*, Mr. G. Le Bon speaks of a hitherto unknown people inhabiting an obscure part of Russia. Peculiar circumstances having induced the author to visit the Tatras Mountains, a very remarkable region, and one very little known, since he was apparently the first to traverse it, he found there a territory surrounded on all sides by steep mountains and inhabited by a people speaking a different language from the nations surrounding them, and with whom they had no intercourse. These people, although less than a century ago given up to brigandage, as the author learned in his study of them, are now very industrious and honest. In spite of a climate so harsh that it would be necessary to go to the extreme north to find a similar one; in spite of a very infertile soil; and in spite of an almost Lacedæmonian diet, consisting mainly of oats, milk, and water, they are living in a most remarkable state of prosperity. They are clearly distinguished from all their neighbors in their external aspect, in their quick intelligence, and in their artistic and literary tendencies.

The villages inhabited by these new people are situated in the territory called Podhale, at the foot of the above-named mountains. This territory, as before stated, being surrounded on all sides by steep mountains, difficult of access, is almost as isolated from the rest of the world as if it were an island in mid-ocean.

As regards its origin, Mr. Le Bon thinks the original stock was Polish, which in past ages became intermixed with individuals coming from different peoples. In isolating itself more and more, and not uniting with outsiders, and in constantly being submitted to the action of the same environment and of the same selection, the primitive agglomeration has become more and more homogeneous and finally formed a new race, whose homogeneity may possibly still increase, but which already possesses common hereditary characters that permit it to be clearly differentiated from all surrounding races.

How to Build a Non-Smoking Chimney.—The chief point is to make the throat not less than four inches broad and twelve long; then the chimney should be abruptly enlarged so as to double the size, and so continued for one foot or more; then it may be gradually tapered off, as desired. But the inside of the chimney, throughout its whole length to the top, should be plastered very smooth with good mortar, which will harden with age. The area of a chimney should be at least half a square foot, and no flues less than sixty square inches. The best shape for a chimney is circular, or many-sided, as giving less friction (brick is the best material, as it is a non-conductor), and the higher above the roof the better.

How the Sun Produces Heat and Light.—In a communication to a Buffalo paper, Dr. H. R. Rogers says that science at the present time admits of four different explanations of the production of sun-light and sun-heat, viz.: 1. Combustion of cosmical substances falling into the sun. 2. Arrest of motion of such cosmical substances. 3. Contraction of the solar mass. 4. Dissociation of compound bodies in the sun's substance. He holds that the first hypothesis, that of "combustion," is virtually given up by scientists on account of its insuperable difficulties. The fuel problem is too intricate for the finite mind. The second, the so-called mechanical hypothesis, is held in greatest favor by scientists to-day, as best accounting for the phenomena, or as being least vulnerable to objections. This hypothesis presupposes the presence in space of an incalculable supply of ponderous masses all roving loosely and by chance until, falling under the influence of the sun, they are drawn thereto with such momentum that the concussion gives rise to inconceivable light and heat. But Dr. Rogers believes that such existence of ponderable matter, away from the influences of gravity, moving about in the universe, and assumed to follow the attraction of the nearest stellar system, can hardly be credited by philosophic minds. The supposition that old, useless worlds, comets, meteors, etc., are attracted to the sun to be utilized for the production of its light and heat, is contrary to every principle of reason and sound philosophy. The inevitable enlargement of the sun's dimensions, which would occur from the accretions resulting from this method, would also prove fatal to this hypothesis. An exact knowledge of the sun for centuries has not in the slightest degree disclosed a change of radius in the earth's orbit; a necessary consequence of any change in the sun's bulk. The third hypothesis, "the contraction of the solar mass," implying a progressive diminution of that body, finds the same objections which lie against its progressive augmentation. The fourth, "dissociation of compound bodies in the sun's substance," depends upon the process of combustion, and is, therefore, open to the objections already mentioned. Each of the foregoing hypotheses stands in direct opposition to the inexorable law of conservation of force. According to the decree of that law, whatever is received by the earth from the sun, an equivalent for the same must again be returned from the earth to the sun to the uttermost fraction. No hypothesis based upon any other foundation can stand. Dr. Rogers's theory of the cause of solar light is a magnetic one. He believes that the

sun and earth are gigantic fountains of magnetic influence, continually acting and reacting upon each other, and that this view gives to the phenomena of light and heat their clearest and fullest interpretations.

Why the Glow-worms Glow.—A French scientist, M. Jousset de Liellesme, claims to have discovered that the glow of the glow-worm is a spontaneous action, and that the little insect has the same object in glowing that some Parisian ladies have in displaying certain ribbon-streamers, which are very appropriately called "*suivezmoi*." It has long been known that the female glow-worm alone understands the art of glowing exceedingly well, though the male and even the larva possess some of this phosphorescence. Some earlier scientists expressed their belief that the glowing apparatus in the female served the purpose of favoring the fructification of the eggs, in so far as the male was attracted from the distance by the phosphorescent light of the female. But it was left to our prosaic age to discover that the light was produced by an essentially spontaneous action. The naturalist made an incision in the head of the female glow-worm with the impression that this animal has an organ in the head which controls his action, and the phosphorescent light at once ceased, but it returned—and this is the most important fact of the experiment—every time that the action of the brain or of the central nervous organ was irritated by artificial means, such as electricity.

Paris Green and Birds.—A writer in the N. Y. *Tribune* says that in using paris green people are doing more than they intended; they are killing the birds. He says: "The swallows no longer build their nests in my barn or sweep my meadows from other barns. The catbird's cry is seldom heard, that used to frequent the potato fields, as I thought, for bugs, and have known him to pull up corn, take the wire-worm that was eating it and leave the corn. The kingbirds are not so numerous, nor are other strictly insect-eaters. The Irishman, fresh over, tried to grasp a paving-stone to throw at the attacking dog, but found it fast. 'Strange country, this; the dogs let loose and the stones tied in the streets.' So now the vermin are let loose and the birds killed by the poisoned insects on the wing or otherwise. The canker-worm used to be kept in perfect subjection on my trees by these winged policemen; but now many of the trees are stripped to the death, and I hear the same complaint from other localities. 'A nation can do without rice, but it can't do without righteousness,' said Dr. Stebbins in 1861; and we can do without potatoes at least for two or three years better, I believe, than we can do without the insect-eating birds."

A New Way of Fighting Consumption.—The Reno *Journal* tells of the case of A. H. Barnes, of that city, who fights off consumption by wearing a silver tube, which passes between the ribs into the lungs. In 1849, Mr. Barnes, then living in Sycamore, DeKalb County, Illinois, was declared an incurable consumptive. The lung was tapped and he recovered. In 1863 he was again taken down by the disease, when he once more resorted to the tube, and has worn it constantly ever since. There is a daily discharge of matter. Mr. Barnes is a man of very regular and temperate habits, does not use tobacco in any form, nor stimulants of any kind, hardly ever uses any medicine, excepting sometimes a little iron for the blood; is always feeling well when the hole in his side is open, sometimes feeling a heaviness there, but has got used to that. This case is certainly worthy the special attention of medical men. It seemed to give a man a new lease of life, even when apparently as good as dead. When Mr. Barnes conceived the idea of tapping his lung, all the physicians but one counted it as a thing that would prove fatal. However, he persuaded one to perform the operation. In 1863, Mr. Barnes was in Honey Lake valley, and was on the brink of the grave. Now, again, the resident physicians were opposed to the idea of an incision, and after repeated appeals for an operation, which was refused, Mr. Barnes borrowed a lance and cut open his side himself. He then inserted a catheter, and drawing off nearly a quart of matter, immediate relief was found. The cough and expectoration stopped almost instantly, and Mr. Barnes was soon upon his feet again. Thus he has prolonged his life for over thirty years.

Paradoxes in Nature and Science.—The water which drowns us can be walked upon as ice. The bullet which, fired from a musket, carries death will be harmless if ground to dust before being fired. A crystallized part of the oil of roses, so graceful in its fragrance, a solid at ordinary temperatures, though readily volatile, is a compound substance, containing exactly the same elements, and exactly the same proportions, as the gas with which we light our streets. The tea which we daily drink, with benefit and pleasure, produces palpitations, nervous tremblings, and even paralysis, if taken in excess; yet the peculiar organic agent called "theine," to which tea owes its qualities, may be taken by itself (as theine, not tea) without any appreciable effect. The water which will allay our burning thirst augments it when congealed into snow, so that Captain Ross declares the natives of the Arctic regions "prefer enduring the utmost extremity of thirst rather than attempt to remove it by eating snow." Yet if the snow be melted, it becomes drinkable water. Nevertheless, although if melted before entering the mouth it assuages thirst like other water; when melted in the mouth it has the opposite effect. To render this paradox more striking, we have only to remem-

ber that ice, which melts more slowly in the mouth, is very efficient in allaying thirst.

Artificial or Patent Fertilizers UNNECESSARY. — A correspondent of the *Country Gentleman* thus alludes to the chemical manures of the market:

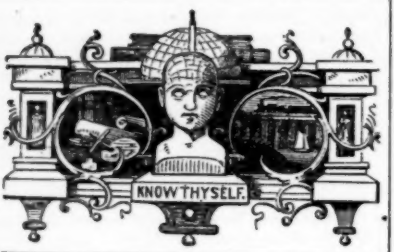
"Recent statements in the *Country Gentleman* authorize the suspicion that we innocent farmers may be victims of a deep-laid plan, concocted between the theorists, chemists, and fertilizer manufacturers, to enable the latter to grow rich by selling to us what we do not need, under the vain pretence that the purchase would enrich our soil, and thus enrich ourselves, so we should all be rich and happy together. It seems there may be serious doubts of the wisdom, or of the necessity, of this policy. Here is Mr. Geddes, a farmer of ripe experience and careful judgment, who concludes, 'after more than half a century of grain raising and mixed farming, that the lands of New York when properly managed do fully sustain their fertility without other manures than may be produced on them by a proper rotation of crops, and a proper amount of farm stock to convert unsalable productions into manure.' This is important information — important even when qualified by Mr. Geddes' statement, that he does not refer to sterile soils, but to 'the true wheat lands of New York.' Though a serious blow, this does not quite knock the bottom out of my theory, because the lands in question may resemble those exhaustless deposits above alluded to, which practically have no bottom to them.

"But here comes another successful farmer from another State—Mr. T. B. Terry—describing his experience with a little farm of thirty-five acres cultivated, which, at the commencement of his dispensation, twelve years ago, was the poorest in town—starvation poor. Yet this little farm—with the contributing aid of twenty other acres equally sterile, excepting a muck swamp, the contents of which are used as an absorbent for manure—'has paid for all the improvements made on it; paid for a large stock of latest improved tools; supported a good-sized family, and furnished the farmer thousands of dollars besides!' Not only this, the farm has transformed itself from abject poverty to high fertility, yielding at the rate of $200 an acre; and Mr. Terry proposes that it shall do better still! And it has done, and is doing this, without the help of a single dollar's worth of phosphates or commercial fertilizers—simply by a judicious system of rotation, stock feeding, and a muck compost!"

Grape Sugar Inferior to Cane SUGAR.—At the last Convention of American Druggists, Mr. C. B. Allaire, of Illinois, read a paper on the use of glucose sugar as a substitute for cane sugar in pharmaceutical operations, in which he stated that such substitution is *unsatisfactory*. The use of grape sugar is objectionable from its lack of sweetness. Thus it fails to mask the drug as effectually as cane sugar. Besides, the syrups made with grape sugar, in which organic matters are contained, are more liable to mould and ferment, because grape sugar, being less soluble than cane sugar, the syrups are of lower specific gravity.

After the reading of this paper, Mr. A. E. Ebert, of Peoria, Ill., gave very interesting information on the manufacture of grape sugar. Explaining its use as an adulterant to cane sugar, he said many dealers say they do not mix glucose with their cane sugar, while in fact they do mix grape sugar with it. In the manufacture of glucose, the corn is first converted into a soluble starch, then into dextrine, and this into glucose, and continuing the process it is finally wholly made into grape sugar. The dense syrup which is sold as glucose is more properly a dextrine syrup, and contains in one hundred parts of solid contents about sixty parts of dextrine, and forty of grape sugar. In the manufacture of grape sugar, the process being carried on further, converts about eighty per cent. of the material into sugar, and leaves only about twenty per cent. of dextrine, and this is the *usual* commercial grape sugar sold. In glucose or the *liquid* variety there is about one hundred and fourteen grains of lime in the gallon. The lime may be entirely removed. Sulphurous acid is sometimes used to bleach the sugar in the manufacture, and this frequently leaves its odor in the sugar.

The Asteroids.—The number of asteroids that have been discovered is now over 220. Recent researches by Herr Hornstein (communicated to the Vienna Academy) appear to prove that the number of those with a diameter of over 25 geographical miles is extremely small, and that probably all such were discovered before 1859. On the other hand, the number of asteroids with a diameter less than five miles seems also to be very small, at least in the parts of the asteroid zone next Mars; in the outer regions next Jupiter there may be more. Most of the asteroids seem to have a diameter between 5 and 15 miles. The average number with a diameter of 5 to 10 miles discovered annually within the last twenty years is about three; the number of those of 10 to 15 miles diameter about 16. Thus, should no telescopes more powerful than the present ones be used in future search, we may expect but a moderate "find" of asteroids with diameters under 5 or over 15 geographical miles, while a considerable increase of those with diameters of 5 to 15 miles may be looked for. It further appears that in the case of the smaller asteroids of 5 to 10 miles diameter the improvement of optical instruments and star maps has resulted in no great increase of annual discoveries in the inner zone; such an increase is observed only in the outer zone. Within certain zone limits there is an increase of the average number of yearly discoveries with the time and with distance from the sun.



CHARLOTTE FOWLER WELLS, *Proprietor.*
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WHO ARE PHRENOLOGISTS?

A SUBSCRIBER asks us with much earnestness to give him the names of twelve "great" men who believe in Phrenology. A fair question we must admit, while at the same time it awakens the suspicion that the inquirer has not made himself well acquainted with the nature and scope of phrenological science. Assuming, then, that he is but a beginner, we shall endeavor to assure him of the trustworthiness of the science by such references as shall be deemed responsive to his request.

In the matter of belief in Phrenology the situation is analogous to that of belief in Christianity; there are certain fundamental principles which are accepted without question, but when details, minor points of experience and application are considered, there appear differences of opinion. It could scarcely be otherwise, for the two subjects are of indefinite scope, and a thousand phases of opinion, and a thousand impressions derived mediately or immediately through observation and reflection contribute to individual difference of view. Take any one of the physical sciences, geology, botany, zoology, astronomy, which are immensely circumscribed in comparison with the study of mental phenomena, and we find the "doctors" differing much with respect to fundamentals even. Authority takes issue with authority regarding the position of strata, the constitution of the sun, the nature of light movement. We have but to read the papers and discussions of a scientific society to find that learned men in the same field of study may be widely divergent in opinion on the significance of data which they generally accept. Nevertheless, because one geologist differs from another; or one naturalist from another, we do not question the fact of either being a geologist or naturalist. Scientific men who devote themselves to a department pay little regard to other departments of science, and those who are interested in physical investigations are, as a class, quite unconcerned about matters psychological. Hence their affirmation or denial of premises advanced by psychologists is of little real importance. We include under the term psychologists all who make the nature of mind their special field of inquiry. Now fully nine-tenths of the men, great and small, who have given some attention to mental studies are phrenologists of one stripe or another. They can not help being phrenologists. All well-informed men with whom we have had any acquaintance, to the extent of nineteen-twentieths at least, could fairly be enrolled under the phrenological banner. Many say, "I believe in the functions of the brain, as set forth by writers like Ferrier, or Bastian, or Broca, or Luys." Indeed, we answer, then you believe like ourselves that the brain is a multiple organ with several distinct centers in correspondence with the several distinct classes of mental operation. "But these

men differ from you in their assignment of functional centers." Not so much as you think; and they differ considerably among themselves—in fact they are busied especially with the functional centres of animal brains, or with the relation of part to part—the substantial structure—or how the nervous organism of man is developed, and its analogies in the ape, dog, cat, etc. When it comes to the psychical relations of the brain they have little to say, and their definitions are involved and lacking in systematic lucidity. They are unwilling to declare themselves disciples of Gall and Spurzheim, yet appropriate the essence of their teachings, and now and then announce as *new*, a discovery in brain structure or function, amid an avalanche of technicalities, which was clearly and modestly set forth by those old doctors. Ferrier, of London, in his extensively circulated work describing his experiments with the galvanic battery on the brains of animals, says that the phrenologists have good reason for locating the intellectual faculties in the anterior lobes. Benedikt, of Vienna, says that a wide base of brain, especially in the lateral region, with a comparatively small, depressed crown is peculiar to criminals, agreeing with phrenologists. Bastian says that fineness of fibre and subdivision of convolutions are indications of mental refinement and high capacity. So do phrenologists. Maudsley insists that character is transmitted by inheritance, and is shown in the organization, especially that of the nervous system. So do phrenologists insist on this biological fact, and thus we might go on and cover the whole field of phrenology and more.

The inquirer, if he were to sound the learned of his acquaintance in a skillful manner would find that most of them are, so far as belief in the nature of the brain is concerned, phrenologists, although they might not accept the name. We have again and again unexpectedly discovered a physician's or minister's hearty acceptance of our science without any inquiry, having the impression that he was arrayed among its opponents, so called. Some of the prominent men in literature and science who have distinctly shown their confidence in the principles of Phrenology as an agent of culture and progress, are the following: Dr. Nahum Capen, of Boston; Mr. Charles Rouvin, author, of Paris; Prof. Amos Dean, of the Albany University, lately deceased; Dr. J. M. Wieting, of Syracuse; Hon. Clark Mills, Sculptor, of Washington; Dr. H. T. Buttolph, Superintendent of the Asylum for the Insane, N. J.; Dr. Nathan Allen, of Lowell, Mass. The late Horace Greeley, and Mr. Emerson, were strong friends of it, and also Mr. Bryant, the poet. If our inquiring correspondent and the reader will look into the little pamphlet on "Indications of Character," they will find other names of prominent men who have shown by their own declarations an unmistakable interest in the phase of mental science which bears the name of Phrenology.

GRANDMOTHER'S ADVICE.

A YOUNG man consulted us to-day with regard to his future, and after hearing what we had to say, inquired, "Would I make a Phrenologist?" We replied: Yes, you could become a good phrenologist. Do you wish to prepare yourself for this vocation? "Well," returned he, "I had been thinking of the ministry. My grandmother's last words

to me, before she died, were the wish that I should become a phrenologist."

You would be a minister in a very wide sphere, we said, if you entered with an earnest purpose upon the duties of the phrenologist, for the work he has to do is that of the teacher and missionary and reformer. If your leaning is strong toward the ministry, we advise you to enter it, but learn what you can of phrenology, and employ its principles in your ministerial work, and you will more than double your power and influence. There are a score of ministers whose names we could mention, who have studied phrenology, and found themselves the gainers by it in capability for every phase of duty.

The young man was of a type intellectually that the Christian ministry needs to-day: practical, reflective, specific, decided, thorough-going and scrupulous, and he evidently desired to follow the advice that so earnestly expressed the interest of an aged relative in a system of mental science, and was pleased to learn that his own preference and her wish could be practically associated with the double result of his own improvement and the benefit of those over whom he might be called to exercise the pastoral function.

There is something instructive in this incident of a woman about to die, pointing a grandson to a certain pursuit; it shows no capricious humor, no transitory notion, but a mature and serious conviction, founded—are we not warranted in saying? on a life's experience. When have we heard of an aged woman sinking into the shadows of death advising a young man, in whom she felt a maternal interest, to study law or chemistry, or to go into the dry-goods business, or to become a carpenter? Such materialistic vocations do not occupy the attention of a person of ripened age, whose hold on life is loosing rapidly; the outlook then is higher and wider than narrow pecuniary success, it embraces that of the mind's growth, the development of the spiritual sense, and it sees in the exercise of the higher faculties in practical work for the welfare of others in mind and body, the noblest employment of man.

THE ADULTERATION CRAZE.

MR. ANGELL, in the earnestness of his investigations, may have overstated the facts of adulteration a little, or urged them in terms somewhat illogical, and so given occasion for the gibes and flings of the critics, but it is nevertheless true that nearly everything in common use in the triturated or liquid form, especially that deemed essential to the proper furnishing of a modern dinner-table, is debased in quality and substance by mixture with cheaper matter. The list which Mr. Angell presented to the Sanitary Association was one of such comprehensive length that after glancing through it we found ourselves in a mood akin to that of an angry man who said of a certain tradesman of the skin-flint order, "If he could only bottle up the atmosphere he'd sell it by the quart"—as it appeared to us that those who supply the necessaries of life, in the extremity of their avarice and business competition have cheapened and corrupted them all. A writer in the *Edinburgh Review*, years ago, in discussing the character of English taxation, presented it very humorously, thus:

"The school-boy whips his taxed top; the beardless youth manages his taxed horse with a taxed bridle on a taxed road; and the dying Englishman, pouring his

medicine which has paid seven per cent. into a spoon that has paid fifteen per cent., flings himself back upon his chintz bed which has paid twenty-two per cent., makes his will on an eight-pound stamp, and expires in the arms of an apothecary, who has paid a license of an hundred pounds for the privilege of putting him to death. His whole property is then immediately taxed from two to ten per cent. Besides the probate, large fees are demanded for burying him in the chancel; his virtues are handed down to posterity on taxed marble; and he is then gathered to his fathers—to be taxed no more."

We have but to substitute the word "adulterated" for "taxed" where it applies in this graphic account of a system equally remarkable for its thoroughness to make a picture of a state of affairs which should not be tolerated in our day.

Breadstuffs, like wheat flour, corn and oat-meals, fortunately can not be debased much before the cheat is apparent, but the materials used for leaven or raising are atrociously adulterated. This fact may be inferred from the controversies rife among the manufacturers of yeast and baking-powders—the warfare being carried on with no abatement of intensity in the advertising columns of newspapers, both religious and secular. The hygienist may growl, "Serve the people right who persist in injuring their bread by deleterious gases. Why don't they eat it in the proper form, sweet and pure, and nutritious?"

The absurd extreme to which the adulteration of yeast materials is carried was amazingly illustrated in an exchange, lately:

"An Illinois merchant who was taking baking-powder in bulk from a Chicago firm, called at headquarters the other day to say that there was something wrong with the goods.

"'I don't think so,' was the reply; 'we make the best article sold in the west.'

"'I think we ought to have a more perfect understanding,' continued the dealer. 'Now, then, you adulterate before you send to me, then I adulterate before I ship, then the retailer adulterates before he sells, and the consumer can't be blamed for growling. I wanted to see if we couldn't agree on some schedule to be followed.'

"'What do you mean?'

"'Why, suppose you put in ten per cent. of chalk, then I put in twenty per cent. of whiting, then the retailer puts in thirty per cent. of flour; that gives the consumer forty per cent. of baking-powder, and unless he's a born hog he'll be perfectly satisfied. You see, if you adulterate fifty per cent. on the start, and I adulterate as much more, and the retailer adulterates as much as both together, it's mighty hard for the consumer to tell whether he's investing in baking-powder or putty; we must give him something for his money, if it's only chalk.'"

Some of our housekeepers who make the bread which is eaten in their own homes, complain much of the trouble they have in providing a good, toothsome loaf, and their complaints are usually levelled at the head of the dealer who furnished the cereal, instead of the yeast maker. Perhaps the above incident will give them a hint of one cause of the trouble, and if it drive them to that final defense of their stomachs, the total disuse of yeast, they will not be losers.

A GOOD SIGN.

THE recent progress of the Temperance cause in the West, manifested as it is in so signal a manner by political successes in Kansas and Iowa, has alarmed the liquor men greatly, and we now have the ridiculous spectacle of manufacturers and vendors of whisky and beer endeavor-

ing to effect a sort of coalition with the advocates of temperance law and order. In their fear of the growing power of temperance principles, they have lost confidence in each other, and now two sections, the whisky men and the beer men, contend for precedence as supporters of public order; one side charging the other with methods and practices which have brought down upon them both at last the lash of justice. It must encourage the reformers much to see the division in the camp of a great enemy hitherto so closely organized in opposition to every effort that might be made against its corrupting influence, and we hope that, like the Kilkenny cats, the minions of whisky and the myrmidons of beer will keep up the fight with one another until nothing but a smoking heap of battered staves and hoops will remain of their hogsheads and barrels.

TUNE STRONGLY DEVELOPED IN BRAIN AND SKULL.—In the May Number of *Harper's Magazine* there is a well-written and charmingly illustrated sketch of Spanish life and scenery, and much space is also taken up by two notable articles on music and poetry—"Music in Austria," "Poetry in London." Numerous portraits, some of them exquisitely engraved, illuminate the context. No one who examines the portraits of the musicians, especially the group of seven on page 829, and the group of three on 831, can fail to observe how broad the foreheads are in the forward temporal region. The engravers have been true to their copies, and doubtless true to life. Where Phrenology would place the organ of Tune, there is, in nearly every case, a pronounced physical expression. This is particularly the case in the head of Prof. Epstein, Leopold Auer, Ed. Strauss, Hans Richter, Jos. Hellemsberger, and Xavier Scharwenca, Mathilde Marchesi, and Marie Wilt. For the average phrenological observer the organ of Tune is by no means easy to interpret from the contours of the forehead; but the tyro, we think, should not be misled in its estimate when scrutinizing such heads as those mentioned.

Our Mentorial Bureau.

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

TO OUR CONTRIBUTORS.—It will greatly *aid the editor, and facilitate the work of the printer, if our contributors generally should observe the following rules when writing articles or communications intended for publication:*

1. *Write on one side of the sheet only. It is often necessary to cut the page into "takes" for compositors, and this can not be done when both sides are written upon.*

2. *Write clearly and distinctly, being particularly careful in the matter of proper names and quotations.*

3. *Don't write in a microscopic hand, as the compositor has to read it across his case, a distance of nearly two feet, and the editor often wants to make changes and additions.*

4. *Never roll your manuscript or paste the sheets together. Sheets about "Commercial note" size are the most satisfactory to editor and compositor.*

5. *Be brief. People don't like to read long stories. A two-column article is read by four times as many people as one of double that length.*

6. *Always write your full name and address plainly at the end of your letter. If you use a pseudonym or initials, write your full name and address below it.*

WE CAN NOT UNDERTAKE TO RETURN UNavailable contributions unless the necessary postage *is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Anonymous letters will not be considered.*

CHARM DOCTORS.—*Question:* Please to answer through the JOURNAL, "Is there any

virtue in 'charm-doctoring'?" There is a man near here who pretends to charm away cancers without the use of any medicine or even seeing the patient. A. H. K.

Answer: No; we have no confidence in the "charm" business, unless it be that of a hearty good-nature; a desire to confer solid benefit on others, allied to a good fund of practical information and scientific experience. The method of treating cancer mentioned in a former Number is gaining friends, because of its simplicity and disuse of the knife.

CURVATURE OF THE SPINE.—MRS. G. C.—You should have the boy examined at once by a good surgeon. From your description, we infer that he is troubled with a form of spinal disease, and the sooner it is attended to the better for his health. The fact of his not growing for the past two years, is in itself an intimation of such trouble.

DEGREES OF DEVELOPMENT.—The practical phrenologist observes seven degrees of head development, running from very small to very large, and from the circumference of twenty inches to twenty-four. A head is harmoniously developed when all parts of it are symmetrical in their extension from the central point—the medulla oblongata and the opening of the ears. Take, for instance, a head measuring twenty-two inches in circumference, usually termed full size. Now, if the head in profile outline shows an evenness or symmetry of development, it is generally full, or as it would be marked, five. The regional developments must also be symmetrical; the crown, forehead, side-head, and back-head evenly rounded, with no individual saliencies or protuberances except those which relate to muscular attachments, which, of course, a skillful phrenologist quickly recognizes. The full-sized head is about seven and a half inches in length from Individuality to the center of Philoprogenitiveness; six inches in width between the centers of Destructiveness; about five inches and a half in vertical height from the center of a line drawn through the middle of the head from ear-opening to ear-opening; four inches and three-quarters in anterior length by calipers from the opening of the ear to the center of Individuality; four inches from the opening of the ear to the center of Philoprogenitiveness. By tape measurement, the distance from Individuality, at the root of the nose, to the occipital spine, in such a head, should be not less than thirteen and a half inches, measurement being taken over the crown on the median line. The distance over the top of the head, from ear-opening to ear-opening, should be fourteen inches. For a symmetrical head half an inch larger in circumference, the above measurements will be larger by a quarter of an inch as to the length and height of the head, and an eighth of an inch as to the length and breadth of the head radially by calipers.

DIET FOR FAT PEOPLE.—F. M.—We should prefer to give personal advice in a matter of this kind, for the reason that our prescription must depend upon the constitution temperamentally of the person. We can only say, in general terms, that those who seem predisposed to fatness should eat vegetables—such as lettuce, cauliflower, green peas, fruit in abundance without sugar, lean mutton and beef, thin soup, eggs in moderation, bread in moderation; but nothing fat or oily, little or no butter, no pastry, no sweet cakes; while they can use milk sparingly and water moderately, and should be especially careful in regard to all sugared foods.

GROWTH OF NAILS AND HAIR.—*Question:* Is a good circulation indicated by a rapid nail and hair growth? G. A.

Answer: The nails and hair grow rapidly when the skin is supplied with substantial nutrition. That is generally the case. In some conditions of disease, however, the hair and nails seem to grow with undue rapidity; in consumption, for instance, it has often been observed that the hair and nails grow rapidly, especially the hair. So, too, in some cases of strumous disorder the abundant growth of the hair has given rise to the remark that it absorbs the greater part of one's strength. Some observers claim that they can detect interruption in the activity of the vital system by indications or marks on the nails.

MIND AND SOUL.—R. A. H.—These terms are used with too much freedom and promiscuity. Old writers did not mix them so much as we moderns. St. Paul is very careful to make a distinction, and referred *soul* to the life or vital element in man. We hold that view of soul, while mind includes the thinking, sentient nature. The spirit inheres in mind. Hence there are three parts in human nature—spirit, soul, and body. We do not pretend to explain the precise constitution of these elements, but their phenomena are like any phenomena susceptible to interpretations.

"READY WIT."—*Question:* When phrenologists speak of a mind being active, do they mean it is a ready mind, quick in its operations? I know an individual who has Wit full, and yet is not ready-minded; he can not give a ready answer to witticisms; he can give sharp answers if allowed time to think. G. B. F.

Answer: What is called quick-witted or ready wit is dependent in a great measure upon temperament. One of the nervous order is more

actively constituted; his faculties operate with freedom, as their co-ordination is more facile than in one whose temperament is of the motive or vital sort. The individual you speak of is probably of the motive cast. He has good judgment, but his mental powers are not quick and prompt. He needs to deliberate, but the results of his deliberation are all the stronger and have a practical point.

What They Say.

Communications are invited on any topic of interest; the writer's personal views, and facts from his experience bearing on our subjects, being preferred.

AN ORGAN FOR SOUNDS.—"*Editor of* JOURNAL: *Sir*—I wish to call your attention to a certain development of the head which the writer believes to indicate memory of sounds. This faculty, according to my observations, is located just back of Calculation and Tune, below Construction, and in front of Acquisition and Bibation. A large development of this faculty does not create any distinct swell or bump, but only makes this part of the head full and smooth, and its deficiency leaves a cavity about the size of the end of the finger. According to my observations, all persons that are remarkable for imitating sounds, tones of voice, etc., have this faculty and Imitation large.

"I have not found a case, so far, that contradicts the above statement. All good telegraphic operators the writer has ever noticed are full in this region of the head. Combined with large Expression (Language) and Imitation, it enables one to imitate sounds, tones of voice, barking of dogs, squealing of pigs, etc. I have also noticed among the stockmen of Texas, that those having the above-named developments large, can readily learn the sound of any bells among their numerous herds and flocks by hearing them but once. I have also observed that persons who have been deaf for a long time are deficient in the above-named region of the head, probably caused by the disuse of the faculty. Often, when making phrenological examinations, I have stated that this individual has a poor or good memory of sounds, as the case might be, and have always received the assent of the individual. Tune loves harmonious sounds, while this faculty only observes simple sounds. Will you please to give notice in your JOURNAL in regard to any observations you or others may make in regard to the above-named developments?

"Yours truly, W. H. DAY."

WHAT WE FIND IN FACES.—Faces, well studied, should teach us how various and unequal are our endowments; should make us feel how incapable we are of understanding each other, for our characters are as different as our faces. There are many faces, however, the harmony of which indicates a well-balanced mind—intelligent and kind faces, cheerful and hopeful faces, betokening thoughts of purity and truth that shed their light often on souls in which darkness and disorder dwell. It is not the regularity of features that pleases us, but the nobility of soul and human sympathy that they express. A noble expression on strong and irregular features seems like sunshine on a rugged landscape, lighting them up so that they have a singular fascination for us. We are often surprised at hearing one called homely that seems beautiful to our eyes. It is interesting to observe the changes that years make in faces; to see how has fared and whither journeyed the barque in whose uncertain fate happiness and misery are involved. Years, even, of those who lead right lives, do not fail to add beauty to the faces. Youth lacks the peculiar charm that thought and strength and sorrow can give to the face. We have a valuable legacy in the phrenology and physiognomy of the great of the past; time has not always spared us accurate representations, yet they disclose much to us. The high brows of the old Greek philosophers denote the intellect, the lofty thought that strives to solve the deepest problems of man's existence. The strong, prominent chin of Cæsar indicates his indomitable, bold spirit. In the high broad head and rugged features of Luther, we can see the intense piety and energy that possessed him. The faces of Napoleon and that of Washington are placed before us—the one expressed invincible will, the other prudent self-reliance. Ofttimes we are disappointed, at first, in the faces of those we have been led to admire, but a closer acquaintance with them makes them the embodiment of the character which we had conceived. Beauty is one of the delights of existence, and beauty of face should be cultivated, not by vain arts, but by intelligence and noble principles; for, as Spenser says,

> "Of the soul the body form doth take,
> For soul is form and doth the body make."
>
> ELLEN JOHNSON.

JOURNAL TESTIMONIALS.—A correspondent writing to us from Kansas, states: "I feel as though I could not do without the JOURNAL. I have taken it for over twenty-five years."

Another, dating his letter at Patrol, Indiana, writes: "I have been a reader or subscriber of the JOURNAL for over thirty years, and have derived a vast amount of pleasure and profit therefrom; but with failing eyesight and other signs of physical decline, I can not expect to enjoy reading many years longer."

We hope our aged and worthy friend will live a hundred years longer, and stick to the JOURNAL to the end.

Still another, a Tennessee editor, writes: "I only have this to say in favor of THE PHRENOLOGICAL JOURNAL, that it has done more for me than anything else I have ever come in contact with; it has made me all I am or expect to be. Consider me a life-long subscriber."

AN AGED ENTHUSIAST.—I am in my 82d year, and not able to work, and for amusement I fall back to my old books. Since the trial of that poor idiot Guiteau I have been looking over the volumes of Combe and your old JOURNALS and Almanacs, and the old faith that I had in the teaching of Phrenology has broken out with all the fervor of 1839–40.

WM. GORDON, OGDENSBURG, N. Y.

PERSONAL.

MISS HELEN GLADSTONE, daughter of the Premier, is a school-teacher, having lately accepted the vice-principalship of Newnham College, in place of Mrs. Henry Sedgwick, who will resign in October.

C. E. LOCKRIDGE, of St. Louis, claims to have taught General Grant to smoke during a fishing excursion where mosquitoes were troublesome. Harper's *Bazaar* pronounces him "a most successful teacher." But does the man believe that he did a creditable thing?

PROFESSOR ESMARCH, the eminent German surgeon, has published a lecture, delivered before the Physiological Society of Kiel, on the treatment of General Garfield's wound. He is of opinion that General Garfield might have been alive but for the treatment that he received.

SENATOR BENJAMIN H. HILL, of Georgia, died August 16th, at the age of 59, from cancer of the tongue. He was a very prominent man in Southern politics. He accepted the results of the war, and supported the new Constitutional Amendments. The cancer is said to have been caused by his use of tobacco.

MR. HENRY SHAW recently celebrated his eighty-second birthday, or rather the citizens of St. Louis celebrated it for him—as Mr. Shaw has done more than any other man toward the improvement of that city. The Botanical Gardens and Tower Grove Park were established by his liberality, and several charitable institutions are built upon ground given by him.

HERBERT SPENCER and Prof. Lyon Playfair, M.P., eminent among the foremost of European savants, are now in this country. The visit of the former is for the benefit of his health, strictly. He will spend about three months, visiting Canada, the West, and New England. His health is so impaired, that he has not been able to work for five months. But how little talk the presence of these great men occasions! Is it the old story of worth and modesty?

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

HEALTH must be earned; it can seldom be bought.

No man ever worked his passage anywhere in a dead calm.—*John Neal.*

PREJUDICE and self-sufficiency naturally proceed from inexperience and ignorance.

GOOD qualities are the substantial riches of the mind; but it is good breeding that sets them off.

The ignorant peasant without fault is greater than the philosopher with many. What is genius or courage without a heart!—*Oliver Goldsmith.*

CONTENTMENT is a pearl of great price, and whoever procures it at the expense of ten thousand desires makes a wise and happy purchase.

MEN are often capable of greater things than they perform. They are sent into the world with bills of credit, and seldom draw to their full extent.—*Walpole.*

EXERCISE, or the use of every organ of the body, is necessary to the healthy and full performance of their functions. When any organ is in complete and prolonged disuse it tends inevitably to decay.

OUR abiding belief is that just as the workmen in the tunnel of St. Gothard, working from either end, met at last to shake hands in the very central root of the mountain, so students of nature and students of Christianity will yet join hands in the unity of reason and faith, in the heart of their deepest mysteries.—*L. Moss.*

THE smallest floweret preacheth while it stays,
In that it crowns with fullness all its days,
And waiteth not to know by any field,
If life may yet some fairer portion yield,
Nor pineth that it was not born a rose;
But sweet by stubble or by greensward grows,
And unto places lying waste erewhile,
Gives all it hath—a little floweret's smile.
—*Geo. H. Coomer.*

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

A MAN has invented a chair that can be adjusted to eight hundred different positions. It is designed for a boy to sit in when he goes to church.

AT a town meeting a large tax-payer rose up to protest against building a new school-house in a certain part of the town. "What's the good of it?" asked he. "They are an ignorant set down there anyhow."

Two well-dressed young ladies were examining a statue of Andromeda, labeled, "Executed in terra cotta." Says one: "Where is that?" "I am sure I don't know," replied the other. "But I pity the poor girl, whatever it was."

THE time of year has come when Dr. ——'s excellent recipe for the preparation of cucumbers is needed. "Peel the cucumber," said he, "with great care; then cut it into very thin slices, put on pepper and salt at discretion, and then—throw it away."

A LITTLE bit of a girl, living near one of the cities, ran in to her mother from the roadside with some early spring blooms in her hands, and, full of the outside glow, exclaimed: "Oh, mamma, how nice it is to live where somebody doesn't own everything."

"Is he honest?" inquired a banker of a friend who recommended a man for the position of janitor. "Honest!" he echoed; "well, I don't know what you call it; but he returned an umbrella which he had borrowed from me yesterday." The man was engaged as cashier.

DOWN in Salem, the other day, a bright little girl was sent to get some eggs, and on her way back stumbled and fell, making sad havoc with the contents of the basket. "Won't you catch it when you get home, though!" exclaimed her companion. "No, indeed I won't," she answered. "I've got a grandmother."

A LAWYER of our acquaintance has a telephone in his office. One morning, while seated at his desk writing briefs, the bell of his telephone rang violently. He put his mouth to the mouthpiece, and asked what was the matter. A small, ladylike voice replied: "Julia has got worms, doctor." He was somewhat taken aback, but supposing Julia was going fishing, replied: "Tell her not to forget to spit on her bait." To which a hoarse male voice replied: "Oh, go to grass, will you?" The lawyer concluded the telephone was drunk, and resumed his work.

Library.

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

THE DOMINION ANNUAL REGISTER AND REVIEW, for the Fourteenth and Fifteenth Years of the Canadian Union. 1880–81.

We are indebted to our esteemed friend Dr. A. M. Ross, of Montreal, for the bulky volume of which the above is the title. It contains an interesting summary of the political history of our neighbor State over the St. Lawrence, and also a tabulated list of remarkable occurrences during the two years it covers, besides furnishing the titles of the more important publications relating to the history, literature, science, and art of Canada, and a miscellaneous compilation of other matters of interest to the American publicist, whether North or South.

THE RESURRECTION OF THE REDEEMED AND HADES. By Rev. James Boggs. 16mo, pp. 69. J. B. Lippincott & Co., Publishers, Philadelphia.

In an earnest spirit the author of this volume discusses a few of the most important and vexed questions in Christian theology. He stands upon ground of a strictly orthodox type, so far as accepting the doctrine of Christ's divinity and mediatorship are concerned, but reviews the condition of the redeemed in "Hades" and the character of their resurrection, in the spirit largely of the critical commentator, offering to the reader the results of his own study of the Scriptures in the original, and the conclusions of much reflection. His picture of the state of the redeemed is often warm to the degree of enthusiasm. In one place he speaks of the place they will occupy in the new sphere thus: "They will have nearer access to him and sustain a nearer relationship to him than any among the unfallen. They will have such an heirship of God as none of the unfallen have." This is exalted language, but, it must be admitted, not without warrant in the declaration of Christ himself to his disciples.

Hades, Mr. Boggs believes to be the state after death of such intelligent beings as will have a resurrection, but is very cautious in his definition of its how and why, because the Bible allusions to its character are somewhat obscure. His view, however, is cheerful and encouraging

to the Christian believer, and by such the book will be read with much gratification.

SCOTT BROWNE'S TEXT-BOOK OF PHONOGRAPHY. A new presentation of the Principles of the Art as practiced by nine-tenths of the members of the Profession in America, and the only work embodying the improvements made in the last ten years. For Schools, Colleges, and Private Instruction. By Mr. and Mrs. D. L. Scott Browne. Part I. 12mo, pp. 88. New York: D. L. Scott Browne, Publisher.

A compact and neatly printed book, and creditable to the experienced teachers whose names are given in the title. No space is wasted in unnecessary comments on the value of this or that "improvement" or accessory of brevity, but the lessons proceed from the simple alphabetic outline to the abbreviated reportorial forms, with a positive directness which pleases us. Most of the vowels ticks, commended for their joining convenience, we like, and also the suggestions to the learner for obtaining skill in the execution of an initial hook, circle, or loop. The combined circle and half circle for *sw*, meets our eye, on page 29, for the first time in a text-book, but as an old friend, as we had used it in our note-taking for many years. Such features require practice for their neat expression, but are of no small help to the reporter. The authors make no claim of originality, and there is no strain evident for abbreviated forms, "for the sake of saving time," but give us a book which is in nearly every respect a clear and neat exposition of a thoroughly tried and accepted system of shorthand.

ALCOHOL AND SCIENCE, OR ALCOHOL: What it is, and What it Does. By Wm. Hargreaves, M.D., author of "Our Wasted Resources." 12mo, pp. 366. Price, $1.50. New York: National Temperance Society & Publication House.

This is the Essay which was awarded the first prize of $500, offered by the Seventh National Temperance Convention in co-operation with Mr. J. H. Jackson, of Pennsylvania, for the purpose of securing a standard work on temperance by an American. Those who have read Dr. Hargreaves' previous books know him for a careful student of statistics, and a clear expounder of their relation to social conditions. In this new volume he presents a formidable array of facts and authorities bearing upon the history, chemistry, and physiological effect of alcohol. He treats in a candid manner of its alleged properties as a food, a medicinal agent, a poison, etc., in fact, goes pretty thoroughly over the field of discussion which has been occupied by alcohol during the past twenty years. The work is divided into ten parts, each being devoted to an important question; for instance, Part I. considers the nature of alcohol. Part III. reviews its physiological action; the experiments and observations of the leading histologists of the day being quoted. Part V. discusses the food question. Parts VII. and VIII. take up the pathological or disease-producing effects of alcohol. Part IX. looks into its effects on children. Part X. is an elaborate answer to the query, Is Alcohol a medicine?

The book is the most valuable contribution to the cause of reform which has been made within ten years, and temperance advocates will find it a most useful aid in their work.

PUBLICATIONS RECEIVED.

MISCELLANEOUS, Literary, Scientific, and Historical Notes, Queries and Answers for Teachers, Pupils, Practical, and Business Men. A new publication, of which Mr. N. B. Webster is editor, and Messrs. S. C. and L. M. Gould, Manchester, N. H., publishers.

IRAK-EL-EMIR: A quarterly devoted to the expression of clear investigative thought. Conducted by J. C. Lane, New York. The first number contains a discussion of "Man and his Surroundings," in which the writer seeks for evidences declarative of the source of human nature, and what there is of essential constitution in that nature, and how it is related to what are called "our surroundings." An "annex" contains a translation of the "Bhagavata-Geeta, or Dialogues of Kreeshna and Arjoon," one of the most interesting of the ancient Hindu poems, or rather a part of one of the Mahabharat, which is esteemed by the Brahmans as containing great mysteries of their religion, and guarded with jealous care on that account.

A MAGAZINE FOR THE BLIND. Mr. N. B. Kneass, of 1126 Market Street, Philadelphia, is about to issue a magazine printed in raised letters for the use of the blind. It will be conducted with a view to supplying those unfortunates who have learned to read with their fingers, with a fund of the best current literature and acquaint them with the progress of general affairs. Such an undertaking as this deserves a liberal support, and we trust that Mr. Kneass will not fail to obtain it.

THE NEW TESTAMENT OF OUR LORD AND SAVIOUR JESUS CHRIST: Translated out of the Greek, being the fourth version, A.D. 1611, compared with the most ancient authorities, and A.D. 1881. Printed for the Universities of Oxford and Cambridge, at the University Press, Oxford. This edition is authorized by the American Committee of Revision. It contains the Introduction or Preface prepared by the Committee on Revision at Jerusalem Chamber, Westminster Abbey, which sets forth the reason for the Revision, and the methods pursued in its performance. The whole time devoted to the

work was ten years and a half—"two years of that time being spent by the Foreign Committee in the consideration of the suggestions from America on the Second Revision, and of many details and reserved questions arising out of their own labors." A short appendix is given, in which there is a list of readings and renderings preferred by the American Committee, recorded by their desire. Messrs. I. K. Funk & Co., of New York, are the American publishers.

PRO AND CON OF SPELLING REFORM. By Prof. O. E. Vaile, formerly of Woodward High School, Ohio. Edited by Eliza B. Burnz, Vice-President, A.S.R.A. We wonder that our spelling reformers do not make better progress. They have now been hammering away for more than twelve years, holding conventions and making suggestions to the literary world, but as yet not a single prominent authority has practically inaugurated a modification of spelling in accordance with their suggestions. To be sure, there are two or three weeklies of minor circulation that have adopted the practice of dropping a silent terminal letter from a few words and of substituting *f* for *ph*. Evidently, notwithstanding the connection of Messrs. Whitney, March, Dewey, and Skeat with spelling reform, its influence is barely felt in general literature. We presume that philologists who oppose, do so on the strong ground of etymology, being apprehensive of serious injury to the science of language by the adoption of phonographic principles.

NATIONAL PROHIBITIONIST AND PRACTICAL REFORMER. The *National Temperance Advocate* has for many years had control of the field, but it has by no means filled it. With the extension of reform and the growth of individual interest, abundant room has been made for other publications, so we welcome the *National Prohibitionist* as indicative of temperance progress, and wish it free course and wide success as a circulating missionary.

THE ALPHA, a monthly published in Washington by Mrs. C. V. Winslow, is well calculated to do good work, especially among people who are thoughtful as to moral and social responsibilities. Its province is a special one. The effects of immorality and of habit, especially irregularities in the domestic relation, are set forth with clearness and emphasis. Its motto, "The divine right of every child to be well born," which it floats at the masthead, is significant of its purpose.

MIND IN THE FACE: An Introduction to the Study of Physiognomy. By William MacDowall, author of "The Man in the Woods" and other poems. 12mo, pp. 87. Price, paper, 40 cents. L. N. Fowler, London; New York, Fowler & Wells. This is a pleasing translation of the features: What is the meaning of varying expressions in types high and low? Numerous illustrations accompany the text.

THE COUNCIL FIRE AND ARBITRATOR: A monthly journal devoted to civilization and the rights of the American Indian, and the promotion of the principles of arbitration as a preventive of war between nations, published by T. A. & M. C. Bland, Washington, D. C., is sustained with earnestness and ability. The death of Col. Meacham, who was the chief promoter of the *Council Fire*, has not, so far as we can see, affected the tone and character of the publication; indeed, it has been amplified somewhat. The number in hand contains a very full report of the first general convention of the National Prohibition League, which is exceedingly interesting as a review of what has been done by modern nations toward turning the sword and spear into the pruning-hook and cultivator. We are only sorry that the influence of the peace-men on both sides of the Atlantic has not been sufficient to deter England from her recent aggressive movements in Egypt. Had gentle measures prevailed in her councils, we think that much mortification might be saved the nation, as well as bloodshed and money.

MESSRS. J. S. OGILVIE & CO., publishers, of New York, have made the following additions to their "People's Library": THOMAS CARLYLE, the History of the First Forty Years of his Life. By James Anthony Froude, M.A. Parts first and second, 20 cents each.—BROKEN LINKS; or, Allie's Triumph. By Molly Merlie. Price 15 cts.—THE STORY OF MARIE DUMONT. By Lady Pollock. Price, 10 cts.—PHIL. SCOTT, the Indian Detective. By Judson R. Taylor. Price, 10 cts.—THE COST OF HER LOVE. By the author of "Dora Thorn." Price, 20 cts.—FROM OUT THE GLOOM. By the author of "Dora Thorn." Price, 20 cts.—A LOGICAL CONCLUSION. By Miss L. Bates. Price, 10 cts.—THE MISSING LINKS AND OTHER TALES. By Mrs. Henry Wood.

LA ESCUELA DE MEDECINA. A medical gazette, published in Mexico every two weeks, is not lacking in enterprise and professional ability. Senor Adrian de Yarary, with a considerable corps of associates, conducts the periodical. Subscription, $4 a year.

NEW YORK MEDICAL COLLEGE AND HOSPITAL FOR WOMEN. Annual announcement, course of 1882-83. The session which will open on the 2d of October offers improved facilities to women desirous of preparing themselves to practice medicine, or to obtain a knowledge of the science. The fees for the course are but $60.00. Mrs. C. S. Lozier, M.D., New York, is Dean and President of the Faculty.